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Factors influencing the issue of "Brain Drain"
Case of Kazakhstan

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Abstract

The study of migration movements is a relevant topic for all countries, and for Kazakhstan, in particular. With widespread globalization and the opening of the Iron Curtain, there has been an outflow of the local population. This thesis provides a detailed background on the migration issue, as well as investigates the causes and factors influencing the outflow of qualified specialists. For the purpose of the study, the method of a questionnaire survey was used. A survey was conducted among some citizens of Kazakhstan, in which 160 people took part, many of whom are employed in the financial and economic, as well as educational sectors. According to the results obtained, it became clear that the main motivations for leaving the country are the push factors of migration. On the contrary, the pull factors of migration, as well as the presence of personal ties and historical linkages in the host country, do not affect the migration decision. The analysed data of conducted research serve as a snapshot of a current migratory mood which might contribute to the literature in the field as there is considerably less data on Kazakhstan.

Keywords: brain drain, migration, Kazakhstan, push factors, pull factors, personal ties, historical linkages

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Introduction

The phenomenon of "brain drain", as well as migration and outflow of the population in general, is a fairly common topic for research. Theoretical research contributes to the academic literature by explaining the reasons that lead an individual to migrate, the process of the migratory process itself, and the consequences of this migratory action. Practical research, in turn, reveals individual cases for a more narrowly focused study. Accordingly, this thesis is focused on the reasons for the external migration of the educated Kazakhstani population.

Kazakhstan is a country in Central Asia region, which gained independence on December 16, 1991. However, from the beginning of the 20th century (1920s) it was part of the USSR. Constant displacement and movement of the population within the Soviet Union was a common practice. With the opening of borders and widespread globalization, the certain amount of current population of independent Kazakhstan is looking for new opportunities abroad, connecting with distant relatives separated in the Soviet period, returning to their historical homeland. However, since the country is young and requires well-educated and qualified specialists for consistent development, it is necessary to study the phenomenon of brain drain. For this purpose, the thesis uses a qualitative and quantitative research method, initially supported by relevant theories.

This thesis consists of 6 chapters. The first chapter is an introduction. The second chapter presents the background of the brain drain phenomenon in Kazakhstan, as well as relevant theories on this topic. In the third chapter, 3 hypotheses are developed, followed by the disclosure of the applied methodology used in the fourth chapter. The fifth chapter focuses on testing hypotheses and deriving research results. In the last, sixth chapter, discussions of the research results and findings, recommendations for policymakers, as well as a conclusion are provided.

Literature review

Background

Determinants of the "Brain drain"

The phenomenon of brain drain is not something completely new and unexplored. However, only one century ago there was not so many sources for studying this problem. Various concomitant factors diverting attention from the main problem mentioned above obscure the scope of this issue. The brain drain can easily be veiled under the general veneer of migration, making no distinction between different reasons for the departure of the country's citizens (Grubel & Scott, 1977). However, nowadays, the situation is slightly different. The topic of brain drain is a field of study for international trade specialists in place of labour force scholars (Grubel & Scott, 1977) and it continues to attract a fair amount of attention (Docquier, Lohest, & Marfouk, 2007). The study of the problem of brain drain is actually slowly gaining momentum. Various articles and research papers try to provide information both on migration trends on international level and on the level of individual country cases. *"According to EconLit there were 247 articles on brain drain written between 2005 and 2009—about twice as many as over the previous 15 years combined"* (Gibson & McKenzie, 2011, p. 108).

The term brain drain is usually referred to as the migration of human capital from the migrant's home country to the country of destination (Salt, 1997, as cited in Giannoccolo, 2009). If we try to split this term, the "brain" part can be defined as a certain knowledge or ability that a person possesses. The second part, "drain", indicates an undesirable event, meaning that the level of migration flow of skilled population exceeds the preferable level. Combining both elements, we get the loss of human resources in large quantities (Bushnell & Choy, 2001, as cited in Giannoccolo, 2009).

In the literature on the subject, it is possible to distinguish various interpretations of the term brain drain. However, the most relevant in our case should be considered: *"Brain exchange implies a two-way flow of expertise between a sending country and a receiving country. Yet, where the net flow is heavily biased in one direction, the terms "brain gain" or "brain drain" is used. A further term, 'brain waste', describes the waste of skills that occurs when highly skilled workers migrate into forms of employment not requiring the application of the skills and experience applied in the former job"* (OECD Report, 1987, as cited in Giannoccolo, 2009, p. 3).

These days, the term brain drain is used to refer to the outward departure of highly skilled specialists, such as doctors, academics, engineers, etc. (Docquier & Rapoport, 2006, as cited in Gibson & McKenzie, 2011). Nonetheless, the term brain drain was first mentioned by the British Royal Society. In that case, it was about the departure of highly qualified representatives of the intellectuals from Great Britain to the USA and Canada in the 1950-1960s (Cervantes & Guellec, 2002, as cited in Gibson & McKenzie, 2011).

As stated earlier, the term brain drain has its origins in the 1950s. However, of course, the prerequisites were much further back in the past. As an illustration, we can take a look and see how authorities of the small town of Saint Quentin, France, in the second half of the 17th century tried to implement regulations regarding the brain drain issue by granting some privileges to the local manufacturer:

"Pierre Guichard, merchant of our city of Saint Quentin, having opened in our above quoted city a factory of Cotton-Waste and of other articles of cotton and thread, he has done humbly observe that, not having been created ever in our Kingdom a factory of this type, he has been forced to support strong costs for attract workers from foreign Countries. […] for

attract many workers in the aforesaid manufacture, we want that the aforesaid workers foreigners that will have worked for six complete and consecutive years in the said manufacture are advised citizens of the Kingdom and naturalized French […] and in the case in which they during these six years come to die, we want that their widows and their heirs enter in possession of the goods that they will have acquired or that they received in this Kingdom […]. (Versailles, February 1671)" (Deyon, 1971, as cited in Giannoccolo, 2009, p. 4).

Usually, the international migration of labour force and skilled minds from the home state is absolutely justifiably regarded as an undesirable trend for the sending country. However, some recent studies show another side of reality, arguing that there is room for a limited but positive effect of this kind of migration (Commander, Kangasniemi & Winters, 2004; Docquier & Rapoport, 2007; Beine, Docquier, & Rapoport, 2001; Schiff, 2005, as cited in Docquier et al., 2007). The constant geographical movement of human capital is the very thing necessary for the transfer of knowledge and technologies accumulated by experience and training. For instance, thanks to the movement of specialists in their craft, the spread of techniques in the textile industry, printing, etc., once served the development of manufacturing (Dedijer, 1968; Rostow, 1960; Butterfield, 1960; Dampier, 1957, as cited in Grubel & Scott, 1977).

Yet, still, Harry Johnson (1965) stated that international migration of skilled workers, so called 'brain drain': "*is obviously a loaded phrase, involving implicit definitions of economic and social welfare, and implicit assertions about facts. This is because the term 'drain' conveys a strong implication of serious loss*" (as cited in Gibson & McKenzie, 2011, p. 107). The emigration of skilled workers significantly affects the entire country structure, taking into account, first of all, the healthcare sector, as well as the education sector. If economists and policymakers do not pay due attention to the emerging trend, "*economic and social catastrophe*

on an unprecedented scale" will most definitely appear (Sattaur, 1989, as cited in Gibson & McKenzie, 2011, p. 111).

The question of taxation is also affected by the problem of brain drain. Bhagwati and Hamada (1974) point out the need to pay more attention to the budgetary costs of outward international migration of skilled workers educated in state institutions of higher education, appropriately supported by tax payments, and not contributing to the tax authorities in monetary terms after departure (as cited in Gibson & McKenzie, 2011).

By studying the various causes and consequences of this problem, we can assume certain norms in the spread of the trend of external labour migration. Factors such as the size of the migrant-sending country's population play a role: political territories with low population level have a greater share of skilled outflows. Furthermore, factors influencing the growth of migration flows outside the country are the presence of various religious entities, as well as civil uncertainty (Docquier et al., 2007, as cited in Gibson & McKenzie, 2011).

Brain drain is the migration of skilled workers with higher education levels. In addition to this category, workers can also be divided into medium-skilled workers, who have completed secondary education, as well as low-skilled workers, with only a primary level of education (Docquier et al., 2007). Highly qualified employees who go abroad in search of work usually enter the so-called STEM fields, such as science, technology, engineering and mathematics. Mattoo, Neagu, and Özden (2008) elaborate that there is also the so called 'brain waste', referring to highly skilled migrants who have not settled into competent professional positions (as cited in Gibson & McKenzie, 2011).

It is generally accepted that job-seeking migration flows occur from emerging economies to advanced ones but like everywhere there are exceptions. For instance, Ireland, a

developed economy and high-income country, after the 2010 crisis was concerned about the possible departure of graduates leading to a brain drain occurrence (Fitzgerald, 2010, as cited in Gibson & McKenzie, 2011).

At first glance, it may seem that labour migration is constantly growing. But in proportionate terms, the level of skills and education in the home countries also does not stand still and shows a positive move. Globally, skilled migration rates remain neutral in the long run (Gibson & McKenzie, 2011). *"Between 1960 and 2010, the global migrant stock increased from 74 million to 188 million, only slightly faster than world population growth, so that the share of the world's population who are international migrants increased only from 2.7 to 2.8 percent"* (UNDP, 2009, as cited in Gibson & McKenzie, 2011, p. 112).

Each specific country has its own level of population and its share in the migration flow. Looking at the average, 7.3 percent of the highly educated citizens of an emerging economy country live permanently in more developed countries. (Gibson & McKenzie, 2011). Although the situation with labour migration does not require drastic actions at the global level, considering each country separately, some useful conclusions can be drawn, since the brain drain phenomenon has completely different effects and consequences for each individual country.

Migration of Kazakhstani skilled workers during 20th century within USSR

Prior to 20th century, there was no formalized system for registering migrants (Alekseenko & Alekseenko, 1999). Currently we do not have enough sources which would characterize pre-Soviet era in its fullest. Additionally, last century, in Kazakh history, is considered as a period when the majority of significant scientific researches, historical facts and openings developed in the favour of the USSR government heads and authorities (Gabov, Kist, & Kazkenov, 2005). As we know, there was no significant inflow or outflow of migrants

that would affect the normal path of the process of population development during the first ten years of Soviet rule. Considering this, three time periods may be identified in the historical course of the republic's population formation: mid-20s - early 60s (inter-census period 1926-1959); early 60s - late 80s (inter-census period 1959 - 1989) and 90s. Throughout the first period, the population was mostly generated through increase in migration balance, during the second period natural population growth predominated and the migration balance turned negative, during the third period there is a decline in the total population. After the fall of the USSR, inter-republican migration took on the status of international migration (Alekseenko & Alekseenko, 1999).

Mid-20s – early 60s

"*Every nation can and should learn from others*" — this Marxist principle became the foundation in the relations of all Soviet nations (Marx & Engels, n.d., cited in Shataev, 1977, p. 44).

In the 1920s, the outflow of the urban residents to auls and villages accelerated. This was certainly relevant for small towns and urban-type settlements. Only 8% of total population of Kazakh SSR, in 1926, was considered as urban residents. However, this situation did not remain the same, showing a significant rise in urban population by 268% with a 2.6% increase in total population of the republic in the period from 1926 to 1939. In terms of size and growth rate of the urban population, Kazakhstan was ahead of the all-Union indicator (112.5%). The transition of the rural population to cities and workers' settlements was facilitated by the decrees adopted in these years by the government of the USSR, aimed at stimulating the departure of rural residents (Alekseenko & Alekseenko, 1999).

During the Great Patriotic War (Eastern Front of World War II), tens of thousands of qualified specialists arrived from the front line, and hundreds of thousands of evacuees. 50,000 professional workers from the western regions arrived in the republic, including 2,300 mining workers and 2,000 mine builders from the Donbass, about 2,000 machine builders from Moscow, Voronezh and Lugansk, hundreds of textile workers from Moscow and Kyiv. In 1943 it expectedly led to the increase in number of active workers in the republic (7% increase in comparison with the year 1940, while Soviet Union total showed a decrease of 38%) (Orazov, 1975, cited in Alekseenko & Alekseenko, 1999). Meanwhile, there was also an outflow of the Kazakhstani manpower, in the amount of approximate 200 thousand workers, working on the sites of construction or manufacturing in different parts of the Union (Kozybaev, 1996, cited in Alekseenko & Alekseenko, 1999).

The decade 1951-1960 is a special page Kazakh SSR history. The mass development of virgin land stood as the priority for soviet authorities. So, for the sake of a great aim, thousands of people of different nationalities from numerous regions of USSR arrived. The peak of the migration balance fell on 1955 – 1956 (61.2% increase in population due to immigration flow) (Alekseenko & Alekseenko, 1999).

Early 1960s – late 1980s

Eventually, in the 1970s, the migration processes, due to which the population increased until the end of the 1960s, were acquiring the opposite character. Inward migration slowly turned into minimum, while emigration flows started gaining momentum. The main directions of inter-republican migrations of Kazakhstani population were characterized by the most significant migration exchange with the RSFSR, Ukraine, Belarus and Uzbekistan. By looking

at the results of questionnaire survey of 1977 which took place in the villages of 4 regions of

the republic and 7 average-sized towns, main motives for migration were identified: the desire

to improve one's financial situation and living conditions; and poor relations with the

administration which is observed as one of the main reasons among high-skilled workers to

emigrate (Kvon et al., 1980).

1990s

In the 1990s, thanks mainly to emigration, an absolute reduction in the number of

Russians, Germans, Ukrainians, and others began (Alekseenko & Alekseenko, 1999).

Since 1968 the number of people leaving Kazakhstan constantly exceeds the number of

those staying (see Appendix A, Table A1). Until the mid-1970s (1968-1975), the migration

outflow was not very large (150.1 thousand people). In the next five years (1975 - 1980), the

process became the most intensive (during these five years, the difference between those who

left and those who arrived was 425.9 thousand people). Then, again, population declined.

Eventually, since the end of the 1980s, there has been an increasingly clear trend towards an

increase in migration activity (Alekseenko & Alekseenko, 1999). Thus, for around 50 years

now, Kazakhstan has been losing its population as a result of migration outflow. Gaining of

independence by post-soviet countries pushed the processes that were determined earlier to a

greater extent. Migration losses of Kazakhstan already in the 1970s – 1980s were the largest

among the Union republics (from 1968 to the beginning of 1991 – 1.527.3 thousand people)

(Alekseenko & Alekseenko, 1999).

Skilled workers outflow in independent Kazakhstan. Current realities

The Republic of Kazakhstan gained its independence in 1991, being the last country leaving former USSR. It is a new chapter in the history of the state. Many areas have either been completely changed or succumbed to structural transformations. This has not bypassed the issue of migration. The departure of the able-bodied population of the republic has influenced and still affects the labour market and the quality of the workforce (Zajonchkovskaja & Vitkovskaja, 2009).

After gaining independence, and a little prior to that, when the iron curtain began to slowly weaken, the first desire of people was to decide on belonging to a particular country (Ashimbayev, 2005), so a noticeable outflow of representatives of the German, Greek and Jewish diasporas began, with the aim of returning to their historical or new homeland (Gabov, Kist, & Kazkenov, 2005). The increase in migratory mood noticeably intensified precisely in the 90s of the last century. On a global scale, the newly minted country occupied 0.4% of the total number of international migrants, while the population of the Republic of Kazakhstan was only 0.003% of the total population of the planet (Gabov et al., 2005).

For a short period, from 1991 to 1996, the outflow of the population amounted to about 2 million people. At the same time, there was a decrease in the number of arrivals in the country, which subsequently led to a decrease in the population, even despite the natural increase, from 16.914 million (1993) to 15.860 million inhabitants (1997). (Gabov et al., 2005). As a consequence, the country experienced a significant loss of human capital (Sadovskaya, 1998, cited in Zajonchkovskaja & Vitkovskaja, 2009).

Although the main wave of emigration and its peak occurred in the 1990s, its trend is still preserved at present. With the opening of the country's borders and globalization, the people of modern Kazakhstan are looking for opportunities abroad. The main destinations are neighbouring countries such as Russia, Ukraine, Belarus, some countries of Central Asia, as well as Germany, Israel, the USA, Canada and Greece. (Gabov et al., 2005; Zharkenova, 2010).

In subsequent years, after gaining independence, migration flows began to have a socio-economic character, rather than a political one (Ashimbayev, 2005). The current trend towards emigration in Kazakhstan is mainly observed among qualified specialists with higher education (Sadyrova, 1997, cited in Gabov et al., 2005), which began in the 1990s, but continues to this day. This trend has a negative impact on the development of the country, especially considering the fact that the country is young and it needs qualified personnel for the development of industry fields and economic growth (Gabov et al., 2005), which in turn will lead to the country's competitiveness in the global arena, which is currently questionable (Zajonchkovskaja & Vitkovskaja, 2009). According to state statistics (see Figure 1), in the period from 1996 to 2004, more than 180 thousand people with higher education in various fields have left the country (cited in Zajonchkovskaja & Vitkovskaja, 2009).

Figure 1

*Number of emigrants with higher education according to the educational profiles (1996 –
2004)*
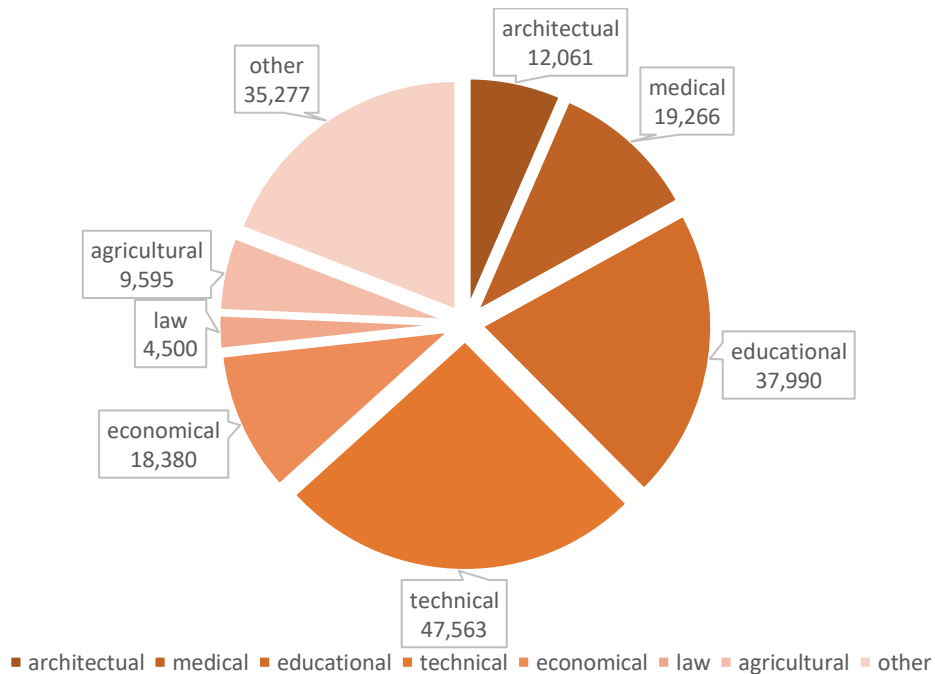
Note. From *Postsovetskie transformacii: otrazhenie v migracijah* [Post-Soviet
Transformations: Reflection in Migration], by Zh. A. Zajonchkovskaja & G. S. Vitkovskaja,
2009, p. 287, Admant.

Representatives of qualified professions occupying places in the field of education,
health, science, etc. were lost in the migratory flows - a problem faced by majority of republics
of the former Soviet Union (Gabov et al., 2005). The damage from the loss of highly qualified
specialists in the period from 1992 to 2004, according to Zajonchkovskaja and Vitkovskaja
(2009), could be in the range of $120-125 billion.

Absolutely different factors influence the decision of qualified specialists to leave their
homeland. Possessing significant skills and abilities, specialists strive to implement them as

successfully as possible (Aliyev et al., 2016). However, taking the case of Kazakhstan, one of the main factors is the crisis of national science. (Gabov et al., 2005).

The main destinations for highly skilled migrants from Kazakhstan are Russia, Israel, the USA and Germany, however, this list also includes the EU countries, Australia, Canada, South Korea, Argentina, Mexico, Brazil, etc. (Gabov et al., 2005).

In Kazakhstan, the trend of the population to acquire higher-paid positions has become noticeable, which in turn frees up space for unskilled workers who have come from the southern neighbouring countries: Kyrgyzstan, Uzbekistan, Tajikistan (Ashimbayev, 2005), thus, at the beginning of the new millennium, Kazakhstan entered into competition with the more developed labour market of Russia, becoming an attractive destination for labour migrants. (Delovarova, 2017). However, as a result of the departure of a large number of highly skilled population and its replacement by a foreign low-skilled population, negative qualitative changes are taking place in the structure of the labour-force potential (Sadovskaya, 2001).

One of the significant events that affected the state of most countries is the 2008 crisis. During the crisis, there was a widespread decline in the migration flows of skilled workers, but already two years later, in 2010, the economic situation has been gradually stabilizing and the flow of international migrants increased both at the global level and at the level of Kazakhstan (Delovarova, 2017). Throughout five years, from 2010 to 2015, more than 172 thousand people emigrated from Kazakhstan (Shaukenova, 2017) The migration balance by specialties of those who emigrated is negative. In the Table 1 it is indicated that technical specialties were experiencing the largest negative migration balance (-15,199), while a positive indicator was for medical specialties (120) (Shaukenova, 2017).

Table 1

Migration of the population over 15 years old by profession (2010 – 2015)

Education	Arrived	Left	Balance
Total	54 787	97 819	-43 032
architectural	3 169	4 676	-1 507
medical	4 771	4 651	120
educational	6 830	10 898	-4 068
technical	12 462	27 661	-15 199
economical	6 698	14 163	-7 465
law	1 916	3 678	-1 762
agricultural	1 982	2 491	-509
other	16 768	28 881	-12 113
not indicated	191	120	71

Note. From *Sovremennoe sostojanie rynka truda v Kazahstane* [The current state of the labour market in Kazakhstan], by Z. K. Shaukenova (Ed.), 2017, pp. 53-54, Bulandy.

In fact, in 2019, nearly 5 thousand engineers, more than 2.5 thousand economists and slightly under 2 thousand educational specialists have left the country, while the migrant inflow with similar professional background consisted of 990, 627 and 537 specialists respectively (Bokayev, Torebekova & Davletbayeva, 2020).

In order to ensure that qualified jobs are filled by well-trained members of the population, various educational programs are organized that encourage and sometimes oblige their students to stay in their homeland for the benefit of society. This measure, known as the *'active regulation'* concept, is quite common among post-Soviet countries (Aliyev et al., 2016, p. 195). One of the most popular of such programs in Kazakhstan is Bolashak. The Bolashak Program was established in 1993 by the first president of independent Kazakhstan, Nursultan Nazarbayev. Its goal is to enrich various enterprises of the country with highly qualified specialists. By providing program participants with grants and scholarships, sending them to

foreign universities, the program also obliges them to return to their homeland upon completion and 'return' the invested funds to the state by working in the country for 5 years (Perna & Jumakulov, 2015), but this was until 2017. In order to increase the attractiveness of working outside the big cities, in 2018 the program changed the period of compulsory work, dividing it into three categories: 5 years for those who work in big cities, 3 years for those who work in rural areas, and 2 years of mandatory work for those who work in educational institutions in villages and small towns (Bokayev, Torebekova & Davletbayeva, 2020). At the same time, if the scholarship holder does not complete his studies or does not complete the mandatory work, he will be required to fully reimburse the cost of the program for all years of study (Perna & Jumakulov, 2015).

Relevant theories

Migration systems theory

The idea of migration systems, early introduced in the 1970s, continued to be a fundamental element of migration theory discussion. Along with other migration authors, Kritz and Zlotnik (1992) consider that migration systems combine several significant factors from different migration theories (as cited in Jennissen, 2007). Regardless of the complication this concept might have, migration scholars continue to come back to the theory of migration systems (Bakewell, 2014). One of the issues can be considered that migration systems are nothing more than a simple calculation of existing migration flows. However, manpower surveys are not fully sufficient, considering the fact that sample sizes are usually not large. Additionally, the information that we have is not completely accurate, since different countries use their own types and determinants of measuring migration changes (DeWaard, Kim, & Raymer, 2012). The theory can state that a migration system has formed in certain region, tell

us about the figures and members of it, but it has its own limit in terms of the prerequisites for the emergence of this system, as well as in explaining how this system will develop further (de Haas, 2010, as cited in Bakewell, 2014).

Systems approach can be classified in many different ways. According to Kritz and Zlotnik (1992), the migration system concept includes the idea of uniting individuals in "*social, political, demographic, and economic*" context which can be distinguished in both host and departure countries (as cited in Jennissen, 2007, p. 414).

Consequently, there is a place for another key factor: territory. For example, migration systems of European, Southeast, North American, etc. regions (Bakewell, 2014). Historical and cultural ties are usually formed among countries that are in geographical proximity to each other. However, different countries may be part of several migration systems (Massey et al., 1993, as cited in Jennissen, 2007).

It has been believed that the concept of migration systems is rather easy and self-explanatory but like any other theory, it needs clarification (Bakewell, 2014). Migration systems have evolved over time, so Simmons and Guengant (1992) questioned how the fundamental constituents of migration flows from the mid-17th century to the present have changed (Bakewell, 2014). United individuals, their families, formed societies lead to transnational communities, which in turn form migration systems (Bakewell, de Haas, & Kubal, 2012; Fawcett, 1989, as cited in Gurak & Cases, 1992) within which there is a constant circulation of views, knowledge, assets and data (Fawcett, 1989, as cited in Bakewell et al., 2012; Gurak & Caces, 1992).

Migration systems are generally categorized according to their operational components and this approach is suitable for any migration forms (Lebhart, 2005, as cited in Jennissen,

2007). For example, the system of labour-force migration, the system of forced migration and many others (Bakewell, 2014).

According to Hoffmann-Nowotny (1981), migration desires arise from the collision of two factors: prestige and power. The social status that we can wield, the prestige that comes from our potential being channeled into the right direction, determines our course in life. Considering that migration is a social concept, when power and prestige are in an uncertain state, an imbalance arises that leads to a subsequent increase in migratory mood among the population and individuals, and the decision to migrate becomes a defining desire (as cited in Bakewell, 2014). The departure country and the receiving side are in a symbiosis of social processes that form the migration systems (Gurak & Caces, 1992) and movement of different groups of people within those systems is an essential part of building a society (Chase-Dunn & Hall, 1994, as cited in Jennissen, 2007).

Another factor of influence in choosing the direction of a possible migration is the presence of a certain feedback of the person who has already completed the migration. According to Mabogunje (1970), the received positive or negative recommendation significantly changes or transforms previously formed migration trends, and in some cases also increases it (as cited in Bakewell, 2014; Bakewell et al., 2012). Moreover, as Massey (1988) points out, by providing the necessary information about the migration process, the feedback mechanism provides an opportunity to reduce the potential costs of emigration (as cited in Gurak & Caces, 1992). While Faist (2004) acknowledges the importance of feedback in migration systems, he also suggests looking at different aspects of the migration process and direct and indirect influences (Bakewell, 2014).

Migration systems include a receiving country and a sending country (Fawcett & Arnold, 1987; Massey et al., 1993, as cited in Jennissen, 2007; Kritz et al., 1992; Mabogunje, 1970, as cited in DeWaard et al., 2012). Usually, various studies are more focused on the end point of the migrant, where one finally settled down, while it is necessary to consider both sides of the migratory movement: the country of origin and the country of destination (Bakewell, 2014). Migration systems are a more complex concept. The presence of push and pull factors is an integral and important part of the study of migration formations, but carries simplified explanations and conditions for both the receiving and sending countries. The theory of migration systems, in turn, explains migratory types of connections as *"shared community ties"*, paying considerable attention to the historical context (DeWaard et al., 2012, p. 1309), as well as takes into account such inter-factors as migration policies and how the experience of previous migrations may proceed in the future trends. Thus, the concept of feedback plays an important role in migration systems (Bakewell, 2014).

Push factors of emigration

Brain drain, as well as other types of emigration, are influenced by various factors. They can usually be divided into two main categories. Factors that attract the attention of potential migrants, make them see more opportunities in other countries, are called pull factors. On the contrary, the factors of influence that force an individual to leave the country of origin, providing discomfort of varying degrees of being in it, are push factors (Roudgar & Richards, 2015).

Push factors explain why a person makes a decision to emigrate. In this case, it is precisely those factors that are unacceptable to some extent in the country of origin. These categories of influencing causes can lead to both voluntary and involuntary external migrations. Oberg (1996) proposed the division of push factors into so-called 'hard' and 'soft' influence

factors. Economic stagnation, political instability, ecological catastrophes, and so on, belong to the hard factors, while inequality, unemployment, few opportunities for development, various kinds of intolerance, etc., he attributed to the soft factors (Kapyshev, 2021).

As Lewin (1951) argues, push factors are the foundation of migration theory, since they provide the original reasons for people's desire to migrate (as cited in Roudgar & Richards, 2015). Consequently, the task of the state is to consider initially this particular category of factors in order to stop the drain of specialists, and subsequently even attract them in order to turn migration flows in the opposite direction (Verkhohlyad & McLean, 2012, as cited in Roudgar & Richards, 2015).

The main push factors vary from country to country, and are also individual for each in particular (Ngoma & Ismail, 2013). There is a noticeable trend, revealing that the pull factors are significant for the higher skilled population, while the push factors are decisive for the low skilled population (Kazlauskienė & Rinkevičius, 2006). As Kim (1998) noted, the absence or presence of a country's commitment to innovation and technology greatly influences the desire of engineers and technicians to migrate to a more welcoming environment. These representatives of the scientific field are looking for well-equipped research sites, educational institutions, IT hubs, and so on. The economic factor, such as wages, is not in the first place in their case (as cited in Roudgar & Richards, 2015). The migration of specialists is explained, not least, by the search for more opportunities to use the full range of their potential, while it is negatively affected by the lack of sufficient recognition of work or low-quality, non-transparent actions of superiors (Beine et al., 2001, as cited in Roudgar & Richards, 2015). The inability to independently move up the career ladder, lack of space for the full disclosure of potential and skills, dissatisfaction with working conditions and quality are the push factors of great significance (Roudgar & Richards, 2015).

The migration of qualified specialists goes hand in hand with the migration of their families. Family ties are not usually seen as initial push factors, but they also take place (Fargues, 2011, as cited in Roudgar & Richards, 2015). This means that the quality of the education provided at various levels, from primary to higher, wages of family members, attitudes towards women, living costs, and so on, are also added to the push factors mentioned (Roudgar & Richards, 2015).

Despite the fact that high-skilled migration is not primarily focusing on financial aspect, in general, the root push factor is the economic factor, regardless of the scale of the migration movement. For example, the migration of specialists from rural areas to cities is primarily justified by the basic desire of finding great opportunities in the city, and, accordingly, by greater rewards for their skills (Krishnakumar & Indumathi, 2014).

Living in a society, a person always remains subject to external social factors. Human rights in the 21st century should be respected everywhere, but this is not the case. The marginalization of some representatives of different movements and cultures still takes place. Various discriminations based on gender, age, race, orientation and other characteristics, both in the workplace and outside, force a certain part of the population to migrate to countries with greater tolerance (Krishnakumar & Indumathi, 2014). Gender discrimination often results in the outflow of skilled female workers from developing to developed countries (Bang & Mitra, 2011, as cited in Roudgar & Richards, 2015). *"Migration from more traditional cultures to Western countries can provide women with an opportunity to re-define their gender roles and status, and gain more social freedom and visibility"* (Hakimzadeh, 2006, as cited in Roudgar & Richards, 2015, p. 77).

Significant push factor in Kazakhstani reality is to what extent the country is corrupt. As Nassimova, Buzurtanova, Smagulov, & Kartashov (2021) stated, it is one of the main push

factors for migrants. This factor should be worked out by the authorities to reduce the migration outflow of the country, in particular, highly qualified specialists and the able-bodied population. According to Amsden (2010), sufficient government focus on reducing corruption in the country leads to reverse migration dynamics. There is an increase in efficiency and motivation, since the government is transparent, any actions are rewarded or punished in accordance with the law, respectively, there is trust in the law and democratic foundations (Roudgar & Richards, 2015). The rest of the main push factors for Kazakhstani migrants are indicated in the Figure 2.

Figure 2

Main 'pushing' reasons of Kazakhstani migrants
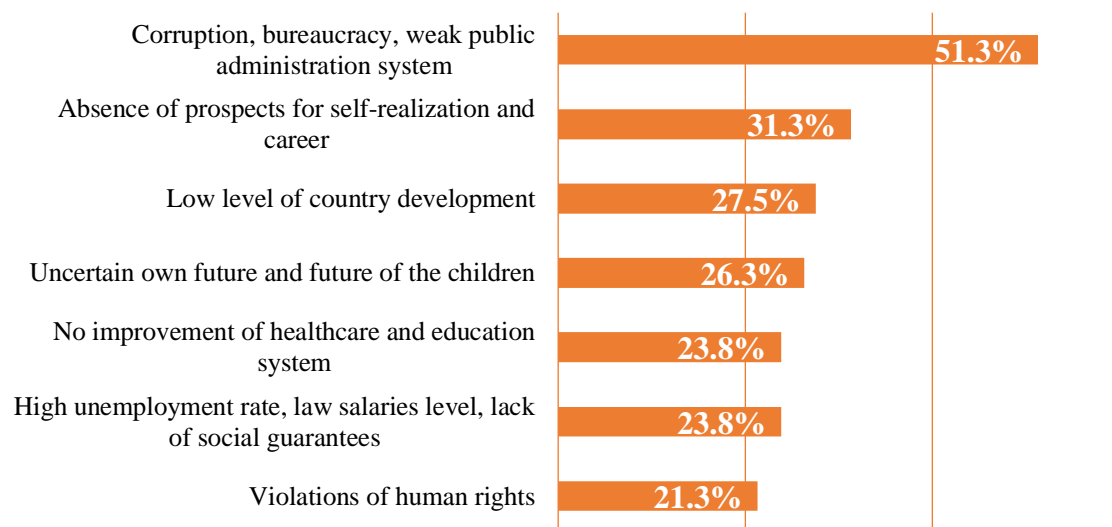
Note. From "Brain drain in Kazakhstan: reasons and consequences. «Push factors affecting emigration from Kazakhstan»", by A. Kapyshev, 2021, *Master's thesis*, p. 26 (http://repository.kazguu.kz/handle/123456789/1007).

Additionally, the insufficient quality of public services provided, heavy bureaucracy, and political pressure affect the migration outflow of skilled people. In many developing countries, the work of state bodies is not at the highest level and the lack of efficiency of their work is negatively affecting the outflow of qualified personnel (Ngoma & Ismail, 2013). The

blocking of the media, as well as the ban on freedom of speech, do not increase the desire of the population to continue to stay in the country (Krishnakumar & Indumathi, 2014).

Obviously, the state should increase the competitive advantage on its territory in various areas, rather than focusing on any prohibition of migration or complicating its processes. It is worth noting that there is no single template solution and a list of necessary actions. However, academic resources on Central Asia emphasize that, in general, in this region, it is necessary to improve the work of the government of a particular country, as well as to introduce long-term policies for regulating the migration flow, and where present, to strengthen their work. According to the guidelines outlined by Olimov, Grote, and Gharleghi (2020), the state needs to develop appropriate policies and take the necessary actions to voluntarily retain highly skilled minds in the country.

Key long-term actions to be taken include:

- Stimulating the creation of small and medium-sized businesses, which will lead to more jobs;

- Improving the quality of education provided;

- Creating a welcoming atmosphere and more work opportunities for women;

- Introduce a trend towards meritocracy and reduce bureaucratic processes and cases of nepotism;

- Respect for human rights and freedom of speech

Government support for businesses is significant in resolving push factors. The easier it is to create a business unit, the more businesses are involved in the country's economy, respectively, the more job positions created which in turn leads to a decrease in unemployment and growth of national economy (Mamyrov et al., 2002, as cited in Olimov et al., 2020). State

support can be seen in the reduction of bureaucratic delays, tax cuts, favourable loan rates, as well as in the provision of quality advice to potential businessmen (Olimov et al., 2020).

Pull factors of emigration

Brain drain can be characterized by a combination of internal and external factors known as the push and pull factors. The basis of the concept of pull factors lies in attracting immigrants, in particular highly qualified specialists, through various incentives and benefits. The policies of most receiving states are aimed at developing programs and activities to attract a qualified and trained worker. Noticeably, there is a greater focus on attractive conditions in the destination country, instead of on unsatisfactory factors in the sending country, i.e., push factors (Lee & Kuzhabekova, 2018). Sending states, in turn, should pay attention to these pull factors for a more detailed development of national policies in order to attract new specialists or return residents to their home country. According to Roudgar (2014), areas such as education, provision of decent opportunities, appropriate support and well-deserved recognition of professionalism, quality of life, political and economic stability should be the focus of public policy-making (as cited in Roudgar & Richards, 2015). In short, pull factors are what attracts a potential emigrant to migrate. Place utility is different for everyone, but in general, greater economic benefits, more job options, improved quality of life style play a big role in attracting migrants (Krishnakumar & Indumathi, 2014).

With widespread globalization, developing countries are starting to open up more, which in turn has a positive effect on attracting international skilled individuals. The phenomenon of brain drain is explained by significant progress in the field of technology and innovation, which entails a large demand for qualified specialists, in particular in the field of information technology (Kazlauskienė & Rinkevičius, 2006). Accordingly, with technological development, digitalization, openness to innovation, countries of medium and low income will

be able to turn the brain drain in the opposite direction. As Popper (1945) states: *«An open society is the key to balancing change and stability»* (as cited in Roudgar & Richards, 2015, p. 79). Now, the protection, observance and respect of human rights is one of the main factors in attracting specialists, especially highly qualified ones (Bang & Mitra, 2011, as cited in Roudgar & Richards, 2015).

As many scholars state, an economic factor such as salary is most certainly an important factor, but for highly qualified personnel it is not fundamental in deciding to emigrate (Ackers, 2005; Richardson & Mallon, 2005; Austin et al., 2014, cited in Lee & Kuzhabekova, 2018), while for many other categories of migrants, salary remains one of the important incentives in the host country (Inkson et al., 2004, as cited in Lee & Kuzhabekova, 2018). There is an inverse relationship between the fact that the higher the qualifications, skills and education of a specialist, the less he is motivated by any economic factor but by the greater conditions for building a career and professional growth (Kazlauskienė & Rinkevičius, 2006). However, international professionals, expatriates, in the host country usually receive a package of other kind of benefits, which may include providing and paying for housing, paying for the education of family members, paying for relocation expenses, and much more (Lee & Kuzhabekova, 2018).

As practice shows, future migrants are more likely to choose potential places of permanent residence closer to their country of origin. Considering this, social conditions, political stability, climate situation are of greater importance in nearby countries than in distant ones. Rarely people choose distant places for permanent residence, about which they know little (Krishnakumar & Indumathi, 2014). However, according to Lee's theory (1966): *«The number of migrants is directly proportional to the number of opportunities at a given place and inversely proportional to the number of intervening obstacles»* (as cited in Krishnakumar

& Indumathi, 2014, p. 11). Obstacles in this theory of migration, especially labour migration, can also be replaced by opportunities. Consequently, as it is shown in the Figure 3, the migration flow depends not only on the distance of sending-receiving countries and the number of specialists in each of these countries, but also on the inter-factor of the presence of a certain number of obstacles or opportunities (Krishnakumar & Indumathi, 2014).

Figure 3

Lee's 'push – pull' theory
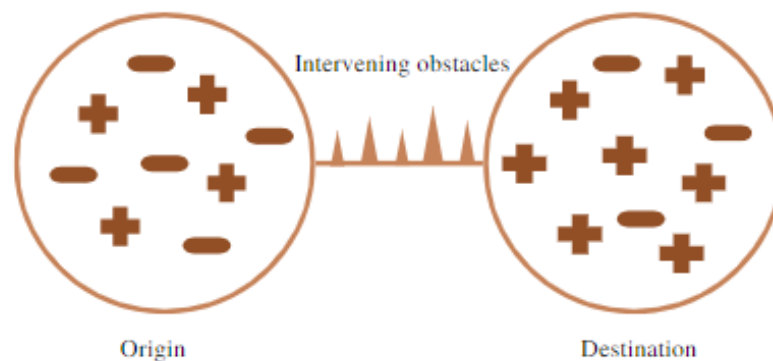
Note. From "Pull and push factors of migration", by P. Krishnakumar & T. Indumathi, 2014, *Global Management Review*, *8*(4), p. 11 (https://web.s.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=4&sid=78d13e91-566f-482e-92e1-d758aaca2182%40redis).

The situation in Kazakhstan is not much different from other countries. The main attractive motives for the departure of qualified specialists include the desire to develop in their field by searching for new opportunities; a significant difference in wages with the same qualifications and experience; the absence of corruption in most host countries, since, first of all, this provides an opportunity to prove oneself on merit and so on. The rest of the main pull factors for Kazakhstani migrants are indicated in the Figure 4.

Figure 4

Main 'pulling' reasons of Kazakhstani migrants
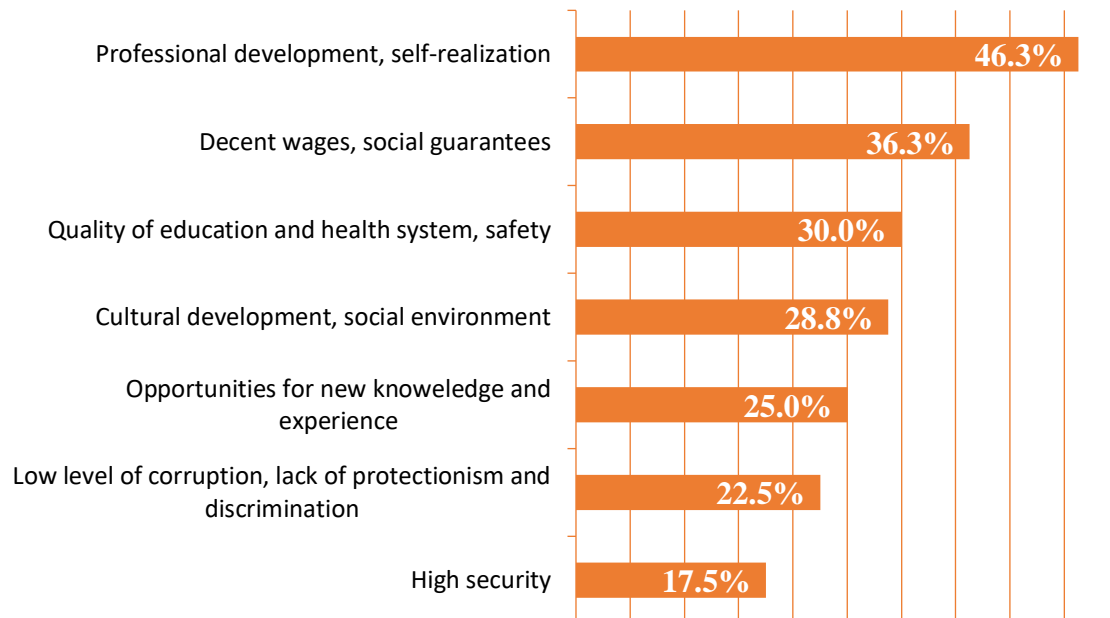
Note. From "Brain drain in Kazakhstan: reasons and consequences. «Push factors affecting emigration from Kazakhstan»", by A. Kapyshev, 2021, *Master's thesis*, p. 27 (http://repository.kazguu.kz/handle/123456789/1007).

Most often, external migration of highly qualified individuals occurs through the acquisition of an international degree (Meyer, Brown, 1999, as cited in Dodani & LaPorte, 2005). According to Dodani and LaPorte (2005), in theory, improving the quality of education and providing more career opportunities will reduce potential external migration moves. But in practice, this does not change the situation much.

In general, financial factor and career opportunities are the basic pull factors for the bulk of migrants (Kangasniemi et al., 2007, as cited in Ngoma & Ismail, 2013). Thus, according to the study of Ngoma and Ismail (2013), financial factor i.e., the difference in salary payments, is an important incentive for migrants to decide to emigrate, hence, the difference in income is

positively correlated with the migration flow. Consequently, as income disparities decrease between advanced economies and middle and low-income countries, decline of migration outflows will occur.

The current demographic situation in most developed countries, aging of population, is a supporting factor in attracting capable specialists of working age to countries with advanced economies. By 2025, developed countries will experience a decline in the number of workers of about 20 million people, while developing countries are increasing their working-age population every day (Murru, 2008). Many host countries, in most cases developed ones, are promoting their focus on the internationalization of institutions and professional organizations. This can be seen in the large number of international students and expatriates in the territories of these countries and the increase in the number of universities' international collaborations and business programs (Kazlauskienė & Rinkevičius, 2006). The term *'focused migration'* describes the actions of governments to attract more highly qualified specialists to boost certain sectors of the economy (Murru, 2008, para. 21). Enterprises and various organizations in developed countries fill their own gaps of qualified personnel by providing job opportunities and benefits (Pang, Lansang, Haines, 2002, as cited in Dodani & LaPorte, 2005). As a result, less developed countries are losing a large portion of human capital, which reduces the pace of its development (Murru, 2008).

According to the findings of Kazlauskienė and Rinkevičius (2006), pull factors have a significantly greater effect on people with higher skill levels. Based on this, we can conclude that the first part of the statement "from a poor country to a rich one" is not correct for all cases. Highly qualified specialists, relying on pull factors, migrate from countries of different incomes. Migration reason for this category of people is not dissatisfaction with the current situation, but rather the desire to develop their potential to the maximum while looking for a

suitable environment for this. Therefore, while host countries have more opportunities for professional growth and full use of potential, the outflow of specialists will continue. Additionally, despite the economic growth of the sending country, attractive conditions of the receiving country i.e., pull factors, will not stop the migration outflow, since it is necessary to take into account the individual requests and characteristics of each migrated separately.

The New Economics of Labour Migration theory

Examining various academic sources, we can conclude that there are quite a few migration theories. For a greater understanding of the topic, the existing theories cannot be understood in isolation. Taking into account the great interest in the topic and for a consistent explanation of migration activities, a specific model is needed that will unite several theories of migration. However, it will be quite difficult to unify the various causes of population migrations (Kumpikaite & Zickute, 2012).

The Neoclassical theory presented by Smith (1776) in the 18th century and by Ravenstein (1889) nearly a century later can be considered the original theory in the topic of migration (as cited in Kumpikaite & Zickute, 2012). The presented theory considers the determinants that directly influence migration flows: the movement of labour and capital. According to their study, the economic factor, namely the differences in income, is the main reason for the migration outflow. The movement of specialists occurs from less developed areas to more economically developed ones (Kumpikaite & Zickute, 2012).

According to Porumbescu (2015), the Neoclassical theory defines the uneven distribution of income as the main factor inducing the migration outflow of specialists to other countries. Since the supply and demand for skilled professionals is not in equilibrium and fluctuate from region to region, according to Neoclassical theory of migration, countries with

field specialists' shortage provide higher wages, while in countries with sufficient number of professionals wages are relatively low (Jennissen, 2007, as cited in Porumbescu, 2015).

More recently, at the end of the 20th century, the theory of the New Economics of Labour Migration (NELM) was presented (Stark & Bloom, 1985; Katz & Stark, 1986; Stark & Taylor, 1989, as cited in Abreu, 2012), which examines the causes and consequences of migration processes in a more in-depth, structured and focused on the current situation manner. Introduced in the 1980s, the New Economics of Labour Migration updated outmoded migration theories by reducing abstract conclusions and focusing on the individual (Abreu, 2012). Obsolete and no longer relevant provisions of migration processes were identified, subsequently improved by Stark and Bloom in the new theory (1985). Additionally, in order to simplify the development of national migration policies, the main behavioural models of the habits of migrants have been established (as cited in Porumbescu, 2015).

NELM theory considers various aspects of labour migration (Abreu, 2012):

• Focus on the family unit as the basis of the migration movement;

• Consideration of labour migration as the distribution of the manpower within markets to increase its competitiveness;

• Globalization leading to the consistent spread of innovations through the migratory movement of specialists.

According to various scholars (Hagen-Zanker, 2000; Taylor, 2001; De Haas, 2010), the theory of the New Economics of Labour Migration is a fundamentally new doctrine, an alternative to the previous, Neoclassical theory (as cited in Porumbescu, 2015). However, as Stark (1991) stated, the assertions in the new theory continue some of the ideas of the Neoclassical theory, adding the necessary complementary elements, or else refute the dogmas

that were established in the old theory (as cited in Porumbescu, 2015). The family unit, i.e.,

household is a substitute to the individual. A united group of people connected by family ties

acts as one in an attempt to reduce the risks of local labour markets, as well as significantly

increase its own income (Stark, 1991, as cited in Porumbescu, 2015).

One of the founders of the theory of the New Economics of Labour Migration, Stark

(1991), claims that it is not enough to consider individual motives of migrant for studying

migration processes (as cited in Porumbescu, 2015). This statement is the basis of the new

theory. According to the NELM theory, the household is the main unit of the migration

movement. Unlike the Neoclassical theory, which focuses on the individual components of the

migrant, the NELM theory states that the household unit through migration, sending a member

of his family to go abroad, diversifies various income risks (Katz & Stark, 1986; Lauby &

Stark, 1988, as cited in Abreu, 2012). According to the research of Stark (1984), his main

hypothesis is that individuals are in constant comparison of social and economic components,

in this case income, among their social zone, which leads to a desire to change the situation for

the better and directly affects decision making (as cited in Abreu, 2012). The migration of

household members to the most economically developed areas reduces ambiguity about

prospective income flows, especially if the expected income exceeds the income of the

remaining members of the household (Stark & Bloom, 1985, as cited in Abreu, 2012). It is

impossible to isolate the factor of family ties, often mentioned by Stark as a household. The

risk of insufficient household income is controlled by leaving of one or more family members

to more economically stable and developed countries and their subsequent sending payments

to the remaining members of the household, usually referred as remittances. A certain

beneficial effect of remittances on the economy of the country of origin of the migrant was

noted by Taylor (1999) (as cited in Porumbescu, 2015). Remittances are the common

occurrence in international migration of specialists to more economically developed countries. As Sindi and Kirimi (2006) noted, the remittances have a positive effect on the purchasing power of the migrant-sending household, as well as on the economy of the country of origin in general, if remittances exceed the *"value of production lost due to migration"* (p. 8). Thus, according to Massey et al. (1993), the risks of low pay for the same work, unemployment, dependence on price volatility are reduced (as cited in Abreu, 2012).

The shift in focus from the individual to the household is a hallmark of the NELM theory. However, according to Abreu (2012), migration processes are more complex, described by an attempt to mitigate the risks associated with incompetent markets. Like other scholars, Hoddinott (1994) argues that the decision to migrate is not considered at the level of an individual, but in conjunction with certain household goals (as cited in Sindi & Kirimi, 2006). According to Sindi and Kirimi (2006), without incompetence, incompleteness and inefficiency of the markets the issue of labour migration would not arise.

With widespread globalization and the opening of new markets, it has become easier to transfer knowledge and new technologies. The development of current innovations is carried out not least through the migration movement of specialists in their field. Innovations are known to be passed from the pioneers to the later ones (Rogers, 1962, as cited in Abreu, 2012). Similarly, in the NELM theory, the feedback factor, disclosed in the Migration Systems theory (Mabogunje, 1970; Massey, 1988; Faist, 2004), has an effect on the migratory desire of household members. Passed feedback from successful migrants reduces the doubts about the decision to emigrate, due to unsatisfactory wages and market incompetence (Stark & Bloom, 1985, as cited in Abreu, 2012).

One of the other distinguishing features of the NELM theory from the Neoclassical theory is the discrepancy in the assessment of the return of a migrant to the country of origin. Whereas in the outdated theory, the return of a migrant to their homeland is seen as a failure and insolvency of the individual, in the NELM theory, the return of a specialist to their homeland is perceived as a positive event that allows the migrant to achieve their plans and goals, improve their skills and income level in more developed countries, and then return back as a rational consequence (Porumbescu, 2015).

Aspiration – capability model

Carling (2002) in his study highlighted a concept rarely considered before – *'involuntary immobility'* - the desire of certain people to move from one place to another, while not having the ability to migrate (as cited in Carling & Schewel, 2018, p. 945). This work prompted a more detailed and in-depth study of migration aspirations and abilities by other scholars (Jónsson, 2008; Paul, 2011; Alpes, 2012; Burrell, 2012; Gaibazzi, 2014, as cited in Carling & Schewel, 2018), while also resonated for a further more general study of migration processes (de Haas, 2010; Docquier, Peri, & Ruyssen, 2014, as cited in Carling & Schewel, 2018). The aspiration – capability model is a fairly simple concept, but quite informative (Schewel, 2020). An in-depth study of aspirations and capabilities to migrate provides a more detailed, narrow and realistic understanding of migration processes (De Haas, 2021).

Various factors influencing the desire to migrate, such as political, economic, social, etc., have a significant impact on a potential migrant, followed by various individual preferences, aspirations and capabilities that determine whether an individual migrates or not. In order to determine such an abstract concept as a person's desire to migrate, the survey method is applied (Carling & Schewel, 2018).

Carling and Schewel (2018) also distinguish aspirations themselves into three categories:

1.   Migratory aspiration to live somewhere else is compared with the current place of residence. Here one of the main roles is played by push and pull factors that determine the attractive incentives of the destination area and the unsatisfactory conditions of the place of departure.

2.   The second category of aspirations to emigrate relates to the factor of comparing past experiences and current success stories of migrants. As Lubkemann (2005) noted, the concept of *'emigrant script'* stimulates the migratory movement by idealizing the experience of predecessors and certainly affecting on expectations (as cited in Carling & Schewel, 2018, p. 953).

3.   The last category of aspirations for migration is individual wishes and preferences. According to these scholars, you are not where you are, but who you are, your individuality and self-identification.

People's aspirations are completely subjective and reflect cultural, educational, individual and other characteristics. Various factors influence the formation of migratory aspirations: education received, social circle, individual desires, past experience, etc. (Czaika & Vothknecht, 2012). However, the very action of migration depends on how the individual is satisfied with the current situation, whether his personal purpose is fulfilled, whether the set of skills and qualifications in the current location is fully used. Nonetheless, with the widespread increase in the level of education, as well as the spread of social networks, the perception of a better life somewhere else induce qualified professionals to look for new opportunities abroad (De Haas, 2021).

In addition, according to De Haas (2021), aspirations are divided into the so-called *'instrumental'* and *'intrinsic'* (p. 18). As he argues, instrumental aspirations are more revealed by migration scholars. They include an increase in earnings, an improvement in social status, high-quality education and medicine, and the like. Whereas intrinsic aspirations are conditioned by expected or experienced feelings from migratory action: joy, excitement, a sense of respect from surroundings, etc. He also noted that changes in various spheres of life at the economic, political, cultural and social levels affect the perception of migration by individuals. A positive increase in economic indicators and, as a result, an improvement in the quality of life provides potential migrants with more capabilities and makes them think more about possible unforeseen expenditures and risks of migration (De Haas, 2021).

It may seem that the problem of mass migration or the outflow of specialists stems in the direction 'developing – developed country', but this is not always the case. As Sen (1999) notes, increasing the number of capabilities leading to an improvement in the quality of life is the interest of every society (as cited in Schewel, 2020).

According to Carling (2002), the aspirations and capabilities to migrate must be examined individually, since the migratory action occurs in the presence of both, while immobility appears in the presence of one of these determinants (as cited in Schewel, 2020). Moreover, it is important to note that despite the presence of both the aspiration and the capability to migrate, it does not always end in actual migration (Czaika & Vothknecht, 2012).

Various scholars studying the issue, as expected, do not always agree. According to De Jong et al. (1986) pull factors that attract potential migrants affect only the aspiration for migration, but not always the act of migration itself. While Van Dalen and Henkens (2008) argue, that push factors in the country of origin have significant influence on increase in both

the aspiration to leave the home country and the actual act migration. Additionally, Gubhaju and De Jong (2009) note that the category of people with higher levels of life satisfaction has reduced number of migratory aspirations (as cited in Bastianon, 2019).

The non-measurable individual characteristics of a certain person directly affect the absence or presence of the desire or aspiration to migrate (Czaika & Vothknecht, 2014, as cited in Bastianon, 2019). Such an individual trait as self-efficacy (Bandura, 1994) is positively correlated with migration aspirations and leads to following corresponding actions (Bernard & Seyoum Taffesse, 2014; Carling, 2002; Czaika & Vothknecht, 2014; De Haas, 2014; De Jong & Fawcett, 1981; De Jong, Root, Gardner, Fawcett, & Abad, 1986; van Dalen & Henkens, 2008, as cited in Bastianon, 2019).

Various economic, political, social and other limitations, in certain cases, restrain departure of individuals. Thus, in the migration process, it is not only the *'capacity to aspire'* (Appadurai, 2004; Ray, 2006 as cited in Czaika & Vothknecht, 2012, p. 5) that is important, but the *'capacity to realise'* permanent departure (Carling, 2004; De Haas, 2010 as cited in Czaika & Vothknecht, 2012, p. 5). The impossibility or limited ability to move reduces the proportion of people actually migrating (Czaika & Vothknecht, 2012).

Brain circulation

The international movement of highly qualified specialists leads to the spread of technology and innovation, which in turn accelerates the economic growth of receiving countries. For quite a long time, this phenomenon was considered with a negative connotation for sending countries, referring to the term 'brain drain', however, in modern conditions, new views on migration processes are needed, namely, the introduction of such a term as 'brain circulation' (Daugeliene & Marcinkeviciene, 2009, p. 49).

According to Salt (1997), where the number of skilled workers who leave exceeds the number of the same category of individuals who have arrived, the phenomenon of brain drain occurs (as cited in Blachford & Zhang, 2014). Johnson and Regets (1998) add the concept of brain circulation which implies the external temporal migration of researchers, students and other educated individuals, in order to acquire the necessary knowledge and skills in order to further use them upon returning home. This contemporary trend will allow countries to receive certain advantages in the long term (as cited in Blachford & Zhang, 2014).

In order to simplify understanding, the brain drain phenomenon is considered in the concept of a one-way flow, while the brain circulation is a two-way flow of knowledge, expertise, innovations and technologies (Lee & Kim, 2010). Additionally, the concept of circulation can be presented in various guises. This may be the movement of individuals within one company on a global scale, short-term stay and work in the territory of another state, the circulation of students, programmers, doctors and other professions (Jöns, 2009).

The trend of brain circulation that emerged in the 1990s has become a kind of substitute to the entrenched concept of a brain drain. External migration of students, professors, engineers, etc. is gradually acquiring temporary character (Gaillard & Gaillard, 1997; Teferra, 2005, as cited in Jöns, 2009). With widespread globalization and convenient ways to move quickly, temporary migration of specialists has become the norm. The constant circulation of skills and knowledge allows both sending and receiving parties to obtain certain benefits, not only from remittances, as it would be in the case of permanent migration (Daugeliene & Marcinkeviciene, 2009).

To date, a large number of scholars have already illuminated a new phenomenon (Biao, 2005; Chacko, 2007; Daugeliene, 2007; DeVoretz, 2002; Helpman, 2004; Kuznetsov, 2006;

Lee, 2008; Saxenian, 2005; Saxenian, 2002; Teffera, 2004; Tung, 2008; Vertovec, 2007; Yun-Chung, 2007; Zweig, 2008, as cited in Daugeliene & Marcinkeviciene, 2009). They consider the circulation of qualified specialists as an integral part of the development of the country. While the movement of qualified specialists grows, the term brain drain gradually loses its significance, since the modern movement of specialists does not have the character of a one-way flow, but a tendency to circulation (Daugeliene & Marcinkeviciene, 2009).

According to Blachford and Zhang (2014), until the end of the 20th century, the permanent migration of highly skilled personnel was justifiably seen from a negative point of view. The studies of those years saw as their goal the prevention of this phenomenon by drawing up proposals for contrasting migration and other policies of their own states based on a detailed analysis of the causes and consequences of the migration outflow. In the 1970s, the policies of many states were mainly aimed at reducing the tendency to brain drain, a decade later the focus shifted more to return of specialists, and in the 1990s policymakers started to promote the idea of brain circulation. Therefore, it is important for the course of the country's development to strengthen policies not only for the return of native specialists, but also for attracting highly skilled representatives of other countries (Daugeliene & Marcinkeviciene, 2009).

So why did such a shift take place precisely in the 1990s from a straightforward one-way movement of migrants towards a circular one? The first reason is globalization. Now countries are interconnected with each other in a single common space, where the circulation of information and capital is a natural consequence. The second reason is the softening of restrictions on international movement, the opening of borders and ease of movement. The last one is that many countries, including developed ones, provide the possibility of dual citizenship, through which they encourage the circular movement of specialists (Tung, 2008).

As Daugeliene and Marcinkeviciene (2009) argue, the circulation of specialists is seen in many countries as a useful trend. This statement is especially true for countries with *'low human capital potential'*, since brain circulation has a positive effect on the growth of the country's economy and society as a whole (as cited in Daugeliene & Marcinkeviciene, 2009, p. 51).

Nowadays specialists leaving their countries do so mostly temporarily, returning to their home country to boost its economy, launching new businesses, opening new companies, turning brain drain into brain circulation, while saving the linkages with the host country in different ways. The knowledge and experience of highly skilled individual acquired abroad, upon return, helps local organizations by transmitting up-to-date and vital information that affects their development. Additionally, foreign-trained specialists, according to Saxenian (2005), act as experts – consultants to policymakers, who are usually risk averse and slow to change.

As expected, the development of ICT has (up to now) led to an increase in the phenomenon of brain circulation. The increased demand for highly skilled individuals, in an era of constant information flow, has increased competition between markets, attracting well-trained experts. All this, coupled with globalization, forms the modern trends of the information age and international migration. Consequently, in order to remain competitive, countries attract skilled professionals, both domestic and foreign, which stimulates brain circulation (Teferra, 2005).

According to Saxenian (2005), while abroad, skilled professionals make the necessary connections in the professional environment in the host country, which positively affects their performance in the country of origin (as cited in Lee & Kim, 2010).

With ubiquitous globalization, brain circulation as an outcome was inevitable. The development of technologies and social media, the promotion of foreign values and ideas have consequently led to the growth of circular migration movements of human capital, innovations, knowledge and techniques. The exchange of cultures, business and professional traditions contributes to the further promotion of the phenomenon of brain circulation in the modern environment due to its positive effects and benefits to countries on both sides (Blachford & Zhang, 2014). However, the main idea of the brain circulation and its positive colouring for the most part take place in the context of equally developed countries. As Blachford and Zhang (2014) noted, for developing countries, the circulation phenomenon does not always work, turning into ordinary drain.

Research hypotheses

According to Oltman and Renshon (2017), social, economic, political and environmental factors are paramount in migratory outflows (as cited in Urbański, 2022). Arenas (2021) and Shih (2016) consider migration by the drain of students earning degrees at international universities (as cited in Urbański, 2022). Dail (1988) argues that social factors are fundamental to the study of migration (as cited in Urbański, 2022). Since the main flow of migration goes from developing to developed countries, such social factors as poverty, lack of career opportunities and growth, the quality of the education received, housing conditions, all this plays the role of push factors forcing the individual to go in search of better opportunities abroad. Chandler and Tsai (2001), in turn, focus on political factors that push migrants to countries with a more stable political situation, respect for human rights, and the absence of military clashes and revolutions (as cited in Urbański, 2022). Having paid due attention to push and pull factors, one should not forget about the labour market, which dictates its own conditions, which in turn directly affects the international migration movements of specialists (Ravenstein, 1885, as cited in Zanabazar, Kho, & Jigjiddorj, 2021).

Since migration in general, and specialists', in particular, is quite difficult to accurately track and evaluate, researchers use various methods in the study of migration outflows. Using traditional, socio-cultural, historical nuances, each study focuses on its own characteristics.

In this thesis, I rely on existing research in the field of migration, while adapting it to Kazakhstani realities. I have identified three main categories that, in my opinion, are worth considering and further researching in the context of Kazakhstan. Push factors, according to many scholars, disclosed in previous chapters, are important in the study of the migration issue. Some of them believe that push factors are the main drivers of individuals leaving abroad (Lewin, 1951, as cited in Roudgar & Richards, 2015).

Push factors present an incomplete picture of migration without considering pull factors. The attractive attributes of the country of destination establish pull factors that also play a role in migration outflow.

During the preparation of this thesis, I did not find studies that deal with the topic of specialists' outflow from an historical and personal point of view. Especially for Kazakhstan, this is an interesting topic, given the historical past of being part of the USSR, which brought the widespread use of the Russian language, the forced relocation of representatives of the German and Korean diasporas to the territory of Kazakhstan in the first half of the 20[th]century, and other consequences, which in turn may affect the subsequent vector of migration departures of individuals and its amount from Kazakhstan abroad.

Push factors of migration

Push factors of migration are those factors that most likely will force a migrant to relocate from the category of a potential to the category of an actual migrant. As noted in previous chapters, factors can be both individual, such as dissatisfaction with the existing lifestyle, working conditions, the impossibility of full disclosure of potential, etc., and general, namely stagnation of the country's economy, the presence of political clashes in the country, the presence of corruption at various levels and non-compliance with the principles of meritocracy, as well as natural disasters, degraded ecology, and much more.

Some studies categorize push factors according to similar attributes. As Zanabazar et al. (2021) noted, the main categories of push factors are as follows: *"economic, demographic, socio-cultural, political and miscellaneous"* (p. 3). However, in this thesis, I decided to reveal some of the main push factors for Kazakhstani specialists, based on recent research in the field of migration, in particular Kapyshev (2021) and Urbański (2022). Kapyshev (2021) in his work does not divide push factors into any categories, which is different from Urbański (2022), who

proposes a model for dividing push factors into three categories: *"economic, social and political"* (p. 2).

Being a representative of the Kazakhstani population myself, I tried to single out exactly those factors that would more likely resonate with the rest of the population of Kazakhstan. In Table 2 I have specified each variable outside the categories.

Table 2

Push factors of migration

PushF1	Salary level
PushF2	Compliance with the principles of meritocracy
PushF3	Career growth opportunities
PushF4	Political situation
PushF5	Level of country development
PushF6	Healthcare system
PushF7	Education system

Note. By author.

As some scholars argue, economic factors such as salary level are the main driving element in the decision to migrate (Krishnakumar & Indumathi, 2014). According to preliminary data from Bureau of National Statistics of the Republic of Kazakhstan (2020), the minimum wage in 2021 is 42,500 tenge, the average monthly nominal salary of one employee is 248,791 tenge (1 EUR = 492.86 KZT, 1 USD = 462.65 KZT as of 04.01.2023). Additionally, according to the official classification of the World Bank, Kazakhstan belongs to the category of upper middle-income economies (GNI per capita from \$4,256 to \$13,205), which in turn

leaves room for further growth into the category of high-income countries (GNI per capita $13,205 and more) (The World Bank Group, 2023).

As mentioned in earlier chapters, according to Nassimova et al. (2021), corruption is a significant push factor when considering the case of Kazakhstan. Non-compliance with the principles of meritocracy, which do not allow one to achieve career heights without personal connections and bribes, will directly affect the motivation and desire of a specialist to subsequently leave the country of origin.

Given all of the above, I formulated the first hypothesis:

Hypothesis 1 (H1). *Push factors are significant for migration of Kazakhstan population.*

Pull factors of migration

Certain incentives possessed by the host country attract the individual through pull factors. As noted in the previous chapters, pull factors can be both individual, such as personal preferences, the desire to improve the quality of life, the aspiration for bigger opportunities, and the like, as well as general, for example, the economic situation, commitment to innovation, favorable political situation in the host country and much more.

Like push factors, pull factors are also respectively categorized in different variations according to similar attributes. As Zanabazaret al. (2021) noted, the main categories of pull factors are as follows: *"economic, demographic, socio-cultural, political and miscellaneous"* (p. 3). Nonetheless, in this thesis, I decided to deal with some of the main pull factors for Kazakhstani specialists, based on recent research in the field of migration, Kapyshev (2021) and Urbański (2022), in particular. Also, in the case of pull factors, Kapyshev (2021) in his work does not divide pull factors into any categories, which is different from Urbański (2022),

who proposes a model for dividing pull factors into three categories: "*economic, social and political*" (p. 3).

Being a representative of the Kazakhstani population myself, I tried to single out exactly those factors that would more likely resonate with the rest of the population of Kazakhstan. In Table 3, I have specified each variable outside the categories.

Table 3

Pull factors of migration

PullF1	Salary level
PullF2	Compliance with the principles of meritocracy
PullF3	Career growth opportunities
PullF4	Political situation
PullF5	Level of country development
PullF6	Healthcare system
PullF7	Education system

Note. By author.

According to QS World University Rankings (2023), higher education institutions in countries such as the USA, UK and Switzerland occupy the first 10 lines in the ranking of the top universities in the world. Accordingly, the quality of education provided among these countries attracts a large number of bright minds from all over the world.

According to Transparency International's annual report (2022), Kazakhstan performs poorly, ranking 103 out of 180 countries in terms of perceived levels of public sector corruption, while Denmark, Finland, New Zealand, Norway and Singapore are in the top five respectively. Since this thesis is more focused on the departure of specialists abroad, such an

important factor as corruption is considered from the point of view of adherence to the principles of meritocracy.

The level of one's own income, the availability of greater career opportunities, the quality of healthcare provided, and similar factors affect or have already influenced the subsequent desire of a potential migrant to actually perform a migration act.

Given all of the above, I formulated the second hypothesis:

Hypothesis 2 (H2). *Pull factors are significant for migration of Kazakhstan population.*

Historical and personal linkages

In many studies on migration and brain drain, in particular, the push and pull model is considered. It has its justification, but, in addition, an important factor in planning (realization) migration is the presence of personal ties and historical linkages connecting the individual with the host country.

Migration systems, as detailed in previous chapters, according to Kritz & Zlotnik (1992) include several different constituent attributes that form a given system such as *"social, political, demographic, and economic"* (as cited in Jennissen, 2007, p. 414). In addition, DeWaard et al. (2012) pays considerable attention to the presence of historical and personal linkages, united under the general name of *"shared community ties"* (p. 1309), when considering the migration issue. Moreover, another important factor in the theory of migration systems is the presence of feedback from those who have already committed a migration action (Bakewell, 2014).

Since in this thesis I am considering exclusively the population of Kazakhstan, the presence of historical linkages, coupled with personal ties, is an interesting platform for study, given the lack of academic work on this topic. In Table 4 studied variables can be found.

Table 4

Personal ties and historical linkages

PT1	Current family members living in the country of destination
PT2	Personal close ones living in the country of destination (romantic partners, friends, etc.)
HL1	Historical origin of the family
HL2	Similar cultures
HL3	Common historical past
HL4	Common language

Note. By author.

Since the ancient times the territory of Kazakhstan has been inhabited by nomadic peoples, almost exclusively consisting of local Kazakh tribes. However, from the beginning of the 17th century, a gradual annexation by the Russian Empire began (Olcott, 1981), followed by the subsequent entry of Kazakhstan into the USSR in the early 20th century, which expectedly led to a large diversity of different nationalities on the territory of modern Kazakhstan.

Nowadays, this is a rather significant factor in many areas, especially in the migration issue. Individuals born in Kazakhstan with their origin belonging to other nationalities, quite justifiably express a desire to return to their historical homeland. Moreover, an important factor for some may be the existence of a common language between the emigration country and the

immigration country. The state language in Kazakhstan is Kazakh, however, *"Russian language shall be officially used on equal grounds along with the Kazakh language in state institutions and local self-administrative bodies"* (The Constitution of the Republic of Kazakhstan, art. XII, § 1). This means not only that the potential direction of migration flows towards the Russian Federation, but also within the territories of the present or former CIS country parties.

It is also worth considering the presence of personal ties in the host country, along with historical factors.

Given all of the above, I formulated the third hypothesis:

Hypothesis 3 (H3). *Historical and personal linkages are significant for migration of Kazakhstan population.*

Proposed model

In the diagram below (see Figure 5), I have illustrated the relationship of the considered dependent and independent variables in the unified model.

Figure 5

Proposed migration factors model
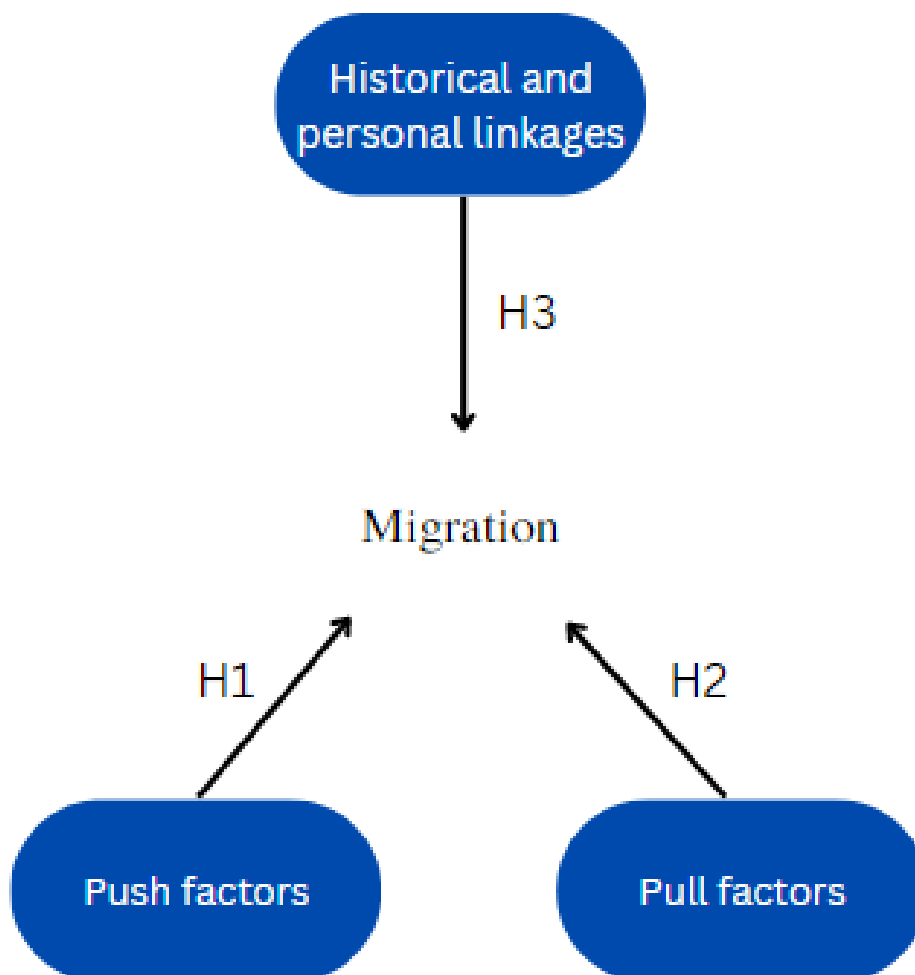
Note. By author.

Research Methodology

Research design

      This thesis focuses on the problems of migration, in particular the problem of brain drain in the context of modern Kazakhstan. The phenomenon of brain drain is studied by scholars using various methods. However, in Kazakhstan there are few academic studies in this area, practically none. Therefore, it became difficult to find a well-designed set of questions and constructs. However, I have tried to build a valid questions structure for the purpose of this study. It mainly takes a quantitative method as a basis, but additionally uses qualitative research methods for a deeper understanding of the present situation.

Research context

      The presented study was conducted among the citizens of Kazakhstan. Kazakhstan, located in Central Asia, is the political and economic leader in its region (Dave, 2007). Comparison of GDP indicators of the countries in the Central Asia region can be seen in Table 5. After gaining independence, the country gradually picked up the pace of its development. There was an improvement in the standard of living of the population which led to the movement of the country into the upper-middle-income category.

Table 5

GDP indicators among countries of Central Asia

Country	Year	GDP (US$, billion)	GDP per capita (US$)	GDP growth (annual, %)
Kazakhstan	2021	197.11	10,387.9	4.3

Kyrgyzstan	2021	8.54	1,276.7	3.6
Uzbekistan	2021	69.24	1,983.1	7.4
Tajikistan	2021	8.75	897	9.2
Turkmenistan	2019	45.23	7,344.6	6.3

Note. The data for Kazakhstan adapted from *Kazkahstan*, by The World Bank, n.d (https://data.worldbank.org/country/kazakhstan). The data for Kyrgyzstan adapted from *Kyrgyz Republic*, by The World Bank, n.d (https://data.worldbank.org/country/kyrgyz-republic). The data for Uzbekistan adapted from *Uzbekistan*, by The World Bank, n.d (https://data.worldbank.org/country/uzbekistan). The data for Tajikistan adapted from *Tajikistan*, by The World Bank, n.d (https://data.worldbank.org/country/tajikistan). The data for Turkmenistan adapted from *Turkmenistan*, by The World Bank, n.d (https://data.worldbank.org/country/turkmenistan).

The country's GDP in 2021 was $197.11 million and the GDP per capita was $10,387.9. However, if compared with economically developed countries, Kazakhstan still lags behind: the GDP for 2021 in the United States was $23.32 trillion, in Italy $2.11 trillion, as well as GDP per capita of $70,248.6 and $35,657.5, respectively (The World Bank, n.d.). Accordingly, some Kazakhstani residents, in search of even better living conditions, career opportunities, personal preferences, and the like, leave the territory of Kazakhstan.

Despite its size (9th in the world in terms of area), the population of the country is relatively small (over 19 million in 2022) (Bureau of National Statistics, n.d). Considering the fact that the country is young, only 32 years since independence, human working capital is needed more than ever. Authorities are trying to make policies for retaining or attracting its

residents to their homeland, but still, many of them leave, commonly through obtaining a diploma in a foreign university (Kapyshev, 2021).

Data collection

This study was conducted exclusively among citizens of Kazakhstan. In order to collect the necessary responses from the respondents, I used the questionnaire survey method. Its distribution took place to a large extent among my network. Accordingly, the data obtained could not represent the entire population of Kazakhstan, but I applied a sample stratification to make it more representative. The questions were written in Russian and then translated into English. The pilot version was tested on 4 people in order to avoid incomprehensible phrases, complex structures, and other errors. To build the questionnaire, I used Google Forms, which allowed me to get the necessary visual statistics for each of the questions, as well as correctly guide the respondent throughout the entire survey, redirecting him to the right question in accordance with the answer received before. A social network, in particular Instagram, was used to distribute the questionnaire. The total number of participants in the questionnaire is exactly 160 people. In the accompanying message, it was also indicated, if possible, to distribute the questionnaire among their acquaintances, with a note that only citizens of Kazakhstan take part in the study. However, 3 respondents turned out to be from other countries (Germany and Brazil). The survey of respondents continued from 20 to 29 December 2022.

Building up the questionnaire

The questionnaire begins with the identification of the main background of the respondent: citizenship, gender, age, level of education and type of current occupation. Next, the defining control question, according to the answers of which the respondent either

continues the survey, or ends it. It is as follows: "Have you been looking or planned to look for work opportunities abroad?". The following questions contribute to the collection of data directly to the research question, namely push and pull factors, personal ties and historical linkages in the host country, and the migratory action itself. For quantitative research, I used a 5-point Likert scale, adapting the variation of the suggested answer options to the purpose of the study. Additionally, the text responses contributed to the qualitative research by giving a broader picture of the present situation. The full version of the distributed questionnaire can be viewed in Appendix B.

Measures

The measures used in the questionnaire have been modified and adapted to the purposes and context of this study. Most of the questions are a 5-point Likert scale with answer options: "yes", "more yes than no", "not sure", "rather no than yes", "no". Question regarding push factors uses a 5-point Likert scale ranging from "bad" to "excellent", question regarding pull factors ranging from "not at all important" to "high importance". Open-ended questions are used as well. The background section uses multiple choice questions.

Results and findings

Sample characteristics

The total number of participants in the survey is exactly 160 people, however, 47 of them were automatically not allowed to take the questionnaire further, as they did not pass the threshold control question (Have you been looking or planned to look for work opportunities abroad?) (See Table 6).

Table 6

Cases summary

Cases	N	%
Valid	113	70,6
Excluded	47	29,4
Total	160	100

Note. By author.

Since the study focuses only on the citizens of Kazakhstan, this survey was distributed among the relevant category of people. A larger number of respondents were females (63,8%), as well as people aged between 19 - 35 years (88,1%). Most of the respondents are already employed (68,1%) and have a higher education diploma (81,9%). The rest of the socio-demographic information is disclosed in Table 7.

Additionally, I compared the obtained socio-demographic indicators of respondents with the corresponding indicators of the entire population of Kazakhstan (see Table 7). However, there are no sources available for data on recent graduates, as well as on current educational attainment. There are data on the number of students in educational institutions for

each year, but these figures are not suitable for analysis, since they do not take into account the

rest of the population who have already reached a certain level of education.

Table 7

Sample stratification

Sample of respondents				Kazakhstan population		Weight
		2022		*2019*		
		N	**%**	**N**	**%**	
Country of origin	Kazakhstan	160	100	18 513 673	100	1
Gender	Female	102	63,8	9 623 458	52	0,81
	Male	58	36,3	8 890 215	48	1,32
Age	Under 18	9	5,6	6 521 439	35,2	6,28
	19 - 35	141	88,1	4 182 170	22,6	0,25
	36 - 65	9	5,6	6 388 254	34,5	6,16
	Over 66	1	0,6	1 421 810	7,7	12,83
Current level of education	Secondary level	29	18,1	n/a	n/a	-
	Bachelor's degree	99	61,9	n/a	n/a	-
	Master's degree	32	20	n/a	n/a	-
	PhD	0	0	n/a	n/a	-
Current occupation *(Could be more than one)*	School student	2	1,3	3 337 783	18	13,84
	University student	48	30	604 345	3,3	0,11
	Recent graduate	7	4,4	n/a	n/a	-
	Employed	109	68,1	8 780 800*	47,4	0,69
	Unemployed	15	9,4	440 700*	2,4	0,25

Note. The data in column "Kazakhstan population", rows: "Country of origin"; "Gender"; "Age" adapted from The World Bank. (n.d.). *Data Bank*. Retrieved from https://databank.worldbank.org/source/gender-statistics
The data in column "Kazakhstan population", row: "Current occupation" adapted from
Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan. (n.d.). *Statistical booklet*. Retrieved from
https://www.stat.gov.kz/edition/publication/booklet
The rest of the data: by author.
* Population aged 15 and over

By dividing the percentage for each category of the Kazakhstan population by the percentage for each category of the sample, appropriate weights were assigned in order to test the representativeness of the survey data obtained. Accordingly, underrepresented categories of population get a higher weight indicator, whereas overrepresented categories of population assigned with a lower weight. Given the size of the sample and based on the data obtained, it can be seen that people over 66 years of age, as well as school students are not reflected in the sample in sufficient quantity. While people aged 19 to 35, university students and the unemployed, on the contrary, exceed the preferred share. This allows us to consider the sample useful to draw some considerations, as the elder age groups are not a relevant component of the emigrating population (see Figure 6). On the other hand, school-aged persons are more likely to migrate together with families and are probably less directly involved in the migration decision. Finally, the higher educational level of the sample fits with the focus of this research on the brain-drain phenomenon.

Figure 6

External migration of Kazakhstani population by age groups
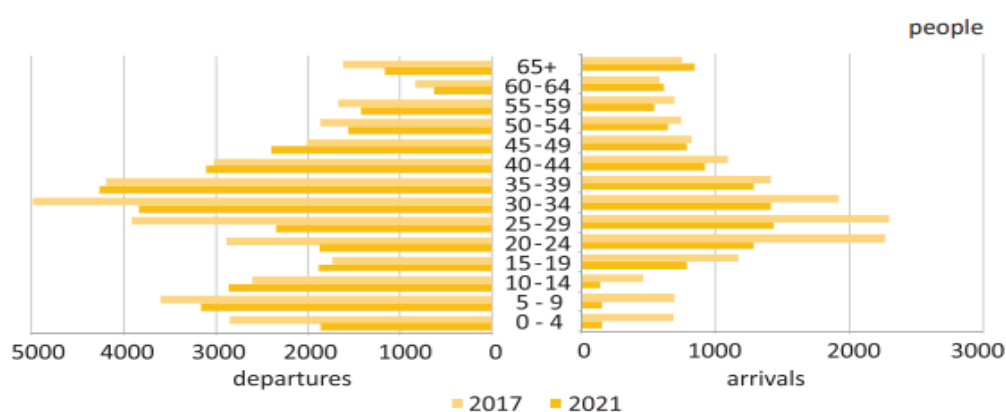
Note. From Demographic development of Kazakhstan, by Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan, 2022 (https://www.stat.gov.kz/edition/publication/booklet).

The questionnaire also contains open-ended questions, according to the responses of which it can be concluded that the majority of respondents are employed in the financial and economic (36.6%), as well as the educational (13.4%) sectors (see Appendix D, Table D1). Most of those who are currently not working plan to run their own business (19.4%), as well as work in the financial and economic sphere (16.1%) (see Appendix D, Table D3). Nearly 83% of those surveyed currently work in Kazakhstan, 6.1% in Italy, 3.7% in Germany, and 1.2% each in the Czech Republic, Russia, Brazil, the Netherlands, the United States and Estonia (see Appendix D, Table D2). Most respondents expressed a desire to move to the USA and Canada (29.2%), as well as to the countries of Southern (23%), Western (19.5%) and Central Europe (16.8%) (see Appendix D, Table D4).

The reliability and validity analyses

Reliability and validity analyses were carried out in accordance with Cronbach's alfa, composite reliability (CR) and average variance extracted (AVE) methods using IBM SPSS Statistics 29.0. The results of the analysis can be found below in Table 8.

Table 8

Reliability and validity analyses of data

Latent Variables	Observed Variables	Factor Loadings	Cronbach's Alpha	CR	AVE
Push factors of migration	PushF1	0,570	0,849	0,855	0,460
	PushF2	0,564			
	PushF3	0,692			
	PushF4	0,685			
	PushF5	0,754			
	PushF6	0,732			

	PushF7	0,723			
Pull factors of migration	PullF1	0,819	0,928	0,926	0,642
	PullF2	0,620			
	PullF3	0,837			
	PullF4	0,793			
	PullF5	0,814			
	PullF6	0,853			
	PullF7	0,848			
Personal ties and historical linkages	PT1	0,645	0,871	0,902	0,608
	PT2	0,637			
	HL1	0,853			
	HL2	0,848			
	HL3	0,878			
	HL4	0,781			
Migration	M1	0,782	0,747	0,823	0,540
	M2	0,800			
	M3	0,745			
	M4	0,595			

Note. By author.

AVE should exceed the level of 0.5 (Fornell & Larcker, 1981), in addition, all other analysed indicators should be above 0.7 (Hair et al., 2021). According to the results obtained, Cronbach's alfa and CR successfully passed the set threshold. The average variance extracted (AVE) of push factors showed a result of 0.460, which is slightly below the threshold of 0.5, however "*on the basis of ρ_n alone, the researcher may conclude that the convergent validity of the construct is adequate, even though more than 50% of the variance is due to error*" (Fornell & Larcker, 1981, p. 46), where ρ_n is composite reliability (CR). Some factor loadings show a value below the recommended threshold of 0.7, however this threshold is not strict. According to Hair et al. (2021) quite often, in studies, the loading factor does not reach 0.7. "*Rather than automatically eliminating indicators when their loading is below 0.70, researchers should carefully examine the effects of indicator removal on other reliability and validity measures.*

Generally, indicators with loadings between 0.40 and 0.708 should be considered for removal only when deleting the indicator leads to an increase in the internal consistency reliability or convergent validity above the suggested threshold value. Another consideration in the decision of whether to delete an indicator is the extent to which its removal affects content validity, which refers to the extent to which a measure represents all facets of a given construct. As a consequence, indicators with weaker loadings are sometimes retained" (p.77). If the factor loading is below 0.4 then it should absolutely be excluded (Hair et al., 2021).

Some questions (11, 13.2(A), 13.1(B), 13.2(B)), contributing to dependent variable (see Appendix B, Table B1) were excluded because they did not reach the Cronbach's alpha threshold of 0.7, thus are not reflected in Table 8.

Correlation analysis

To explore the correlation between individual push and pull factors, as well as personal and historical linkages abroad, a corresponding analysis was carried out. The results obtained can be found in Appendix C, Table C1. Whereas Figure 7 visually represents the study model reflecting all the constructs.

Figure 7

Proposed migration factors model with constructs
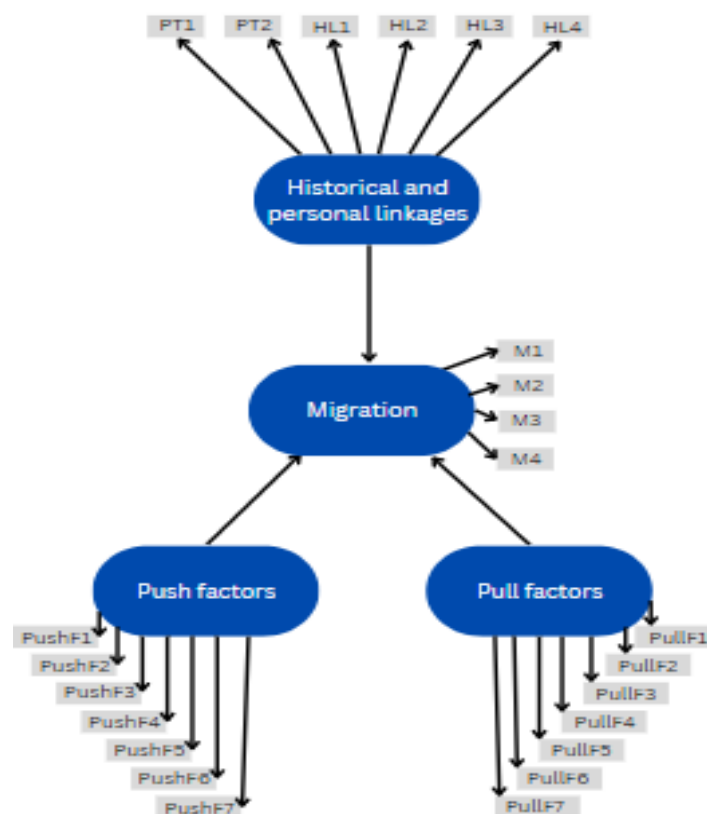
Note. By author.

Correlation analysis indicated that push and pull factors, historical linkages and personal ties and, interestingly, personal ties and pull factors have a significant and positive correlation between one another. In turn, almost no significant correlation was found between push factors and personal ties and historical linkages, as well as between pull factors and historical linkages.

Hypotheses testing

The main purpose of this thesis is to test the hypotheses. For this, a linear regression analysis was carried between the dependent variable – Migration, and independent variables separately: Push Factors, Pull Factors, Personal Ties and Historical Linkages. For this purpose, IBM SPSS Statistics 29.0 was used.

In order to test Hypothesis 1, a bivariate regression analysis was performed (see Tables 9 – 11). According to the results obtained, the R square is 0.081 which means that 8.1% change in migration can be accounted by push factors proposed in my study. ANOVA analysis showed that push factors are statistically significant for migration of Kazakhstani population $F_{(1,111)}$ = 9.841, p = 0.002. Based on the results of the regression analysis, with a positive beta coefficient (β = 0.193) and statistical significance level of less than 0.05 (p = 0.002), it can be concluded that Hypothesis 1 (H1) is confirmed.

Table 9

Model summary (H1)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,285[a]	0,081	0,073	3,27372

Note. By author.

a. Predictors (Constant), PushF

Table 10

ANOVA [a] (H1)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	105,468	1	105,468	9,841	0,002[b]
	Residual	1189,612	111	10,717		
	Total	1295,080	112			

Note. By author.

a. Dependent Variable: M; b. Predictors (Constant), PushF

Table 11

Coefficients[a] (H1)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4,196	1,129		3,718	<,001
	PushF	0,193	0,062	0,285	3,137	0,002

Note. By author.

a. Dependent Variable: M

In order to test Hypothesis 2, a bivariate regression analysis was performed (see Tables 12 – 14). According to the results obtained, the R square is 0.008 which means that less than 1% of change in migration can be accounted by pull factors proposed in my study. ANOVA analysis showed that pull factors are not statistically significant for migration of Kazakhstani population $F(1,111) = 0.867$, $p = 0.354$. Based on the results of the regression analysis, with a positive beta coefficient ($\beta = 0.054$) but statistical significance level of more than 0.05 ($p = 0.354$), it can be concluded that Hypothesis 2 (H2) is refuted.

Table 12

Model summary (H2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,088[a]	0,008	-0,001	3,40250

Note. By author.

a. Predictors (Constant), PullF

Table 13

ANOVA[a] (H2)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10,034	1	10,034	0,867	0,354[b]
	Residual	1285,046	111	11,577		
	Total	1295,080	112			

Note. By author.

a. Dependent Variable: M; b. Predictors (Constant), PullF

Table 14

Coefficients[a] (H2)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6,015	1,734		3,469	<,001
	PullF	0,054	0,058	0,088	0,931	0,354

Note. By author.

a. Dependent Variable: M

In order to test Hypothesis 3, a bivariate regression analysis was performed (see Tables 15 – 17). According to the results obtained, the R square is 0 which means that there is no effect of personal ties and historical linkages proposed in my study on migration itself. ANOVA analysis showed that personal ties and historical linkages are not statistically significant for migration of Kazakhstani population $F_{(1,111)} = 0.019$, $p = 0.890$. Based on the results of the

regression analysis, with a negative beta coefficient (β = -0.006) and statistical significance

level of more than 0.05 (p = 0.890), it can be concluded that Hypothesis 3 (H3) is refuted.

Table 15

Model summary (H3)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,013[a]	0	-0,009	3,41546

Note. By author.

a. Predictors (Constant), PTHL

Table 16

ANOVA[a] (H3)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0,222	1	0,222	0,019	0,890[b]
	Residual	1294,858	111	11,665		
	Total	1295,080	112			

Note. By author.

a. Dependent Variable: M; b. Predictors (Constant), PTHL

Table 17

Coefficients[a] (H3)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7,724	0,943		8,194	<,001
	PTHL	-0,006	0,045	-0,013	-0,138	0,890

Note. By author.

a. Dependent Variable: M

Discussion and recommendations

Discussion of the results

The study, as mentioned earlier, was conducted exclusively among citizens of Kazakhstan. The purpose of this thesis was to test the three hypotheses presented in order to make contribution to the existing academic literature, as well as for the possible use of the obtained data for further research in this area and improvement of the policies of Kazakhstan.

The results obtained showed that push factors are important for the citizens of Kazakhstan when making a decision on migration. On the contrary, pull factors did not show significance among the respondents. Lewin (1951) noted that push factors are the basis of the migration issue, since these factors include the root and original migratory motives of the individual. Accordingly, the results of this study might confirm his statement.

In addition, my study proposed a set of other factors in order to take into account the historical past of the country. However, the results indicated that the presence of personal ties and historical linkages of the respondents in the host country does not affect their decision to migrate. This is a rather interesting observation, since according to Gabov et al. (2005), after gaining independence, in the 1990s, the main directions of migration outflows from Kazakhstan were Russia, Ukraine, Belarus and some countries of Central Asia, which, like Kazakhstan, are former members of the USSR. It can be assumed that at present the joint historical past does not play a big role for the Kazakh population. The statement might also be supported by the findings of a qualitative study. According to the data obtained, only 1 (0,9%) respondent have an actual (or planned) migratory destination in Eastern Europe and none in Central Asia (see Appendix D, Table D4).

Recommendations

The topic of the migration issue is quite important, as it reveals the root problems in the ongoing work of the management of state structures. Since the country is in constant development, it requires capable and qualified specialists. However, in order to voluntarily retain them in the country, it is necessary to work out each sphere of vital activity.

Since, according to the results of the study, the significance of push factors on the migration decision being made was revealed, existing state programs and policies should be worked out and improved. Through consistent actions, it will be possible not only to stop the outflow of human capital, but also to increase the attractiveness of the country itself for specialists from other countries (Verkhohlyad & McLean, 2012, as cited in Roudgar & Richards, 2015). However, it is worth mentioning that there is no periodic change of power in Kazakhstan. Since the early 1990s, after secession from the USSR, Nursultan Nazarbayev has been president, and only in 2019, Kassym-Jomart Tokayev became the second president of independent Kazakhstan. The constant change of power, democratic elections, freedom of speech has a positive impact on the areas of healthcare, education, economic development, etc., as the competition of political players stimulates better results.

According to the Official Information Source of the Prime Minister of the Republic of Kazakhstan, from January 2022, the minimum wage is increasing from 42,500 tenge to 60,000 tenge (1 EUR = 492.86 KZT, 1 USD = 462.65 KZT as of 04.01.2023) (2022, para. 2). The salaries of civil servants are also increasing by 20% (2022, para. 5). However, in reality, these measures are insufficient. According to the data of the National Bank of Kazakhstan "*Median estimates of expected and perceived inflation hit historical maximum*" (2022, para. 1), actual inflation by the end of 2022 was 20.3%, while expected inflation was 21.3%, perceived 22.1%

(National Bank of Kazakhstan, 2022, figure 2). Most of the population lives on a subsistence level, unable to save additional funds for extra expenses.

According to Nassimova et al. (2021), corruption is a significant push factor for Kazakhstanis. The problem of corruption affects almost all spheres and career advancement, in particular. Non-compliance with the principles of meritocracy and the lack of career opportunities demotivate the population of the country. An excellent example of the fight against corruption is Georgia. Among the countries of the former members of the USSR "*Georgia is one of the first countries in the region to establish legislation that holds Georgian companies criminally liable for bribery*" (OECD, n.d., para. 5). As Ivanov (2013) noted, the government of the country during all the years after gaining independence, applied various anti-corruption reforms and policies developed by international agencies. Due to these reforms, the legislation of Georgia has also undergone changes. Some of the measures were quite drastic, namely the removal from service of about 35,000 police officers and the constant arrests of officers until the habit of taking bribes was completely exterminated. However, at the same time, wages were increased by 10-20 times, which satisfied the employees and did not motivate them to participate in corrupt practices. Moreover, Georgia had a tendency to "clan corruption", i.e., family and other personal ties played a big role in moving up the career ladder. However, the introduction of tough measures and reforms, changes in the Criminal Code and regulatory framework, consistent and enhanced measures have significantly helped in the fight against corruption. Given the historical background of the countries, the problems that need to be solved, and a quite similar mentality of the two countries, Kazakhstan might act in accordance with the example of its close neighbour.

Conclusion

The phenomenon of brain drain or the issue of departure of qualified specialists abroad was taken into exam in this thesis. Starting from the historical background of this issue, and ending directly with a quantitative and qualitative study of the population of Kazakhstan, a contribution was made to the existing academic literature, which in turn allows a greater disclosure of this topic in subsequent future studies.

The analysis of the sample i.e., sample stratification made it possible to compare the results of the survey with actual national statistics. Drawing parallels between the survey sample and the official statistics of those who migrated abroad in 2017 and 2021 (see Table 7 and Figure 6), it can be seen that the main group of migrants are individuals aged 19 to 35 in both cases, and the number of migrants aged 36 and older is declining. This category of people is the basis of the economy of a developing country, from which we can conclude that the study of the topic of the departure of young able-bodied specialists is still relevant for Kazakhstan. Moreover, based on the results obtained, statistically significant and non-significant variables for migration of Kazakhstani population identified, from which it can also be concluded that the prevailing proportion of university students aged 19 to 35 is not depending on personal ties and historical linkages to potential countries of destination. Therefore, in order to reduce the outflow of skilled minds, Kazakhstan needs to focus on improving the factors that will voluntarily motivate the population to settle in this country.

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Appendices

Appendix A

Migration balance (1968-1994)

Table A1

Migration balance (1968-1994)

Years	Population growth (thousands of people)	Including	
		natural increase	migration balance
1	2	3	4
1968-1969	212.0	227.7	-15.7
1969-1970	209.0	222.7	-13.7
1970-1971	202.0	228.2	-26.2
1971-1972	219.0	237.5	-18.5
1972-1973	207.0	233.5	-26.5
1973-1974	210.0	230.8	-20.8
1974-1975	216.0	244.7	-28.7
1975-1976	146.0	241.8	-95.8
1976-1977	140.0	246.5	-106.5
1977-1978	152.0	244.0	-92.0
1978-1979	183.0	248.0	-65.0
1979-1980	174.0	240.6	-66.6
1980-1981	195.0	236.9	-41.9
1981-1982	200.0	246.9	-46.9
1982-1983	199.0	253.2	-54.2
1983-1984	196.0	254.8	-58.8
1984-1985	194.0	269.6	-75.6
1985-1986	186.0	270.1	-84.1
1986-1987	216.0	291.7	-75.7
1987-1988	223.0	294.3	-71.3
1988-1989	71.0	280.2	-209.2
1989-1990	154.0	255.9	-101.9
1990-1991	102.8	234.5	-131.7
1991-1992	170.5	219.5	-49.0
1992-1993	22.1	200.8	-178.7
1993-1994	-43.3	160.0	-203.3
1994-1995	-263.3	145.9	-409.2

Note. From *Naselenie Kazahstana za 100 let (1897 – 1997)* [Population of Kazakhstan for 100 years (1897 – 1997)], by N. V. Alekseenko & A. N. Alekseenko, 1999, (pp. 120-121), Poligraphia.

Appendix B

Questionnaire

My name is Angelina Chekabayeva. I am doing a master's program in International Management at Ca' Foscari University of Venice. At the moment, I am writing my thesis on the topic "Factors influencing the issue of "Brain Drain". Case of Kazakhstan". Thus, I ask you to help me in conducting research on this topic by answering my survey questionnaire. Please try to be more specific by reducing the use of "not sure" option. Your responses will go a long way in helping me build my thesis successfully. All information you provide will remain confidential and will only be used once for academic purposes.

Thank you for your contribution!

Меня зовут Ангелина Чекабаева. Я прохожу магистерскую программу по международному менеджменту в Венецианском университете Ка' Фоскари. В настоящий момент пишу диссертацию на тему "Факторы, влияющие на проблему "утечки умов". Кейс Казахстана". Таким образом, я прошу Вас помочь мне в проведении исследования по данной теме, ответив на мой анкетированный опрос. Пожалуйста, постарайтесь быть более конкретными, сократив использование варианта "не уверен". Ваши ответы во многом помогут мне успешно построить мою диссертацию. Вся предоставленная Вами информация останется конфиденциальной и будет использована единожды в академических целях.

Спасибо за Ваш вклад!

Table B1

Survey questions

№	Question	Question options	Answer options
1	**Please specify your country of origin** *Пожалуйста, укажите Вашу страну происхождения*		➢ **Kazakhstan** | *Казахстан* ➢ **Other** | *Другое*
2	**Please specify your gender** *Укажите Ваш пол*		➢ **Male** | *Мужчина* ➢ **Female** | *Женщина*
3	**Please specify your age** *Укажите ваш возраст*		➢ **Under 18 y.o.** | *До 18 лет* ➢ **19 – 35 y.o.** | *19 – 35 лет* ➢ **35 – 65 y.o.** | *35 – 65 лет* ➢ **Over 65 y.o.** | *За 65 лет*
4	**Please specify your current educational level** *Укажите Ваш уровень образования на данный момент*		➢ **High school diploma** | *Диплом о среднем образовании* ➢ **Bachelor degree diploma** | *Степень бакалавра* ➢ **Master's degree diploma** | *Степень магистра* ➢ **PhD** | *Степень доктора наук* ➢ **Other** | *Другое*
5	**Please specify your current occupation [could me more than one]** *Укажите Ваш тип занятости на данный момент [может быть больше, чем один]*		➢ **School student** | *Ученик школы* ➢ **University student** | *Студент* ➢ **Recent graduate** | *Недавний выпускник* ➢ **Employed** | *Трудоустроен* ➢ **Unemployed** | *Не трудоустроен*
6	**Have you been looking or planned to look for work opportunities abroad?** *Искали ли Вы (или планировали/планируете искать) работу заграницей?*		➢ **Yes** | *Да* ➢ **No** | *Нет*
7	**How satisfied are you with the listed factors in Kazakhstan?** **On a scale of 1 to 5 where:** **1 = bad** **2 = unsatisfactory** **3 = neutral** **4 = satisfactory** **5 = excellent**	➢ **Salary level** | *Уровень заработной платы* ➢ **Compliance with the principles of meritocracy** | *Соблюдение принципов меритократии* ➢ **Career growth opportunities** | *Возможности карьерного роста* ➢ **Politicial situation** | *Политическая ситуация*	➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5

Note. By author.

Table B1 (continued)

Survey questions

		Насколько Вы удовлетворены перечисленными факторами в Казахстане? *По шкале от 1 до 5, где:* *1 = плохо* *2 = неудовлетворительно* *3 = нейтрально* *4 = удовлетворительно* *5= отлично*	➤ **Level of country development** | *Уровень развития страны* ➤ **Healthcare system** | *Система здравоохранения* ➤ **Education system** | *Образовательная система*	
8		**How important are the listed factors to you when assessing the country of migration?** **On a scale of 1 to 5 where:** **1 = bad** **2 = unsatisfactory** **3 = neutral** **4 = satisfactory** **5 = excellent** *Насколько для Вас важны перечисленные факторы при оценке страны миграции?* *По шкале от 1 до 5, где:* *1 = абсолютно не важно* *2 = низкая значимость* *3 = нейтрально* *4 = средняя значимость* *5 = высокая значимость*	➤ **Salary level** | *Уровень заработной платы* ➤ **Compliance with the principles of meritocracy** | *Соблюдение принципов меритократии* ➤ **Career growth opportunities** | *Возможности карьерного роста* ➤ **Politicial situation** | *Политическая ситуация* ➤ **Level of country development** | *Уровень развития страны* ➤ **Healthcare system** | *Система здравоохранения* ➤ **Education system** | *Образовательная система*	➤ 1 ➤ 2 ➤ 3 ➤ 3 ➤ 5
9		**Do the factors assessed in Q7 influence your decision to migrate?** **On a scale of 1 to 5 where:** **1 = yes** **2 = more yes than no** **3 = not sure** **4 = rather no than yes** **5 = no**		➤ 1 ➤ 2 ➤ 3 ➤ 4 ➤ 5

Note. By author.

Table B1 (continued)

Survey questions

	Влияют ли для Вас факторы, оцененные в вопросе №7, на принятие решения о миграции? *По шкале от 1 до 5, где:* *1 = да* *2 = скорее да, чем нет* *3 = не уверен* *4 = скорее нет, чем да* *5 = нет*		
10	**Do the factors assessed in Q8 influence your decision to migrate?** **On a scale of 1 to 5 where:** **1 = yes** **2 = more yes than no** **3 = not sure** **4 = rather no than yes** **5 = no** *Влияют ли для Вас факторы, оцененные в вопросе №8, на принятие решения о миграции?* *По шкале от 1 до 5, где:* *1 = да* *2 = скорее да, чем нет* *3 = не уверен* *4 = скорее нет, чем да* *5 = нет*		➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5
11	**Are you willing to stay in Kazakhstan if the factors indicated in Q7 are resolved and satisfied?** **On a scale of 1 to 5 where:** **1 = yes** **2 = more yes than no** **3 = not sure** **4 = rather no than yes** **5 = no**		➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5

Note. By author.

Table B1 (continued)

Survey questions

		Готовы ли Вы остаться в Казахстане, если факторы, указанные в вопросе №7, будут проработаны и удовлетворены? *По шкале от 1 до 5, где:* *1 = да* *2 = скорее да, чем нет* *3 = не уверен* *4 = скорее нет, чем да* *5 = нет*		
12		**Are you employed?** *Трудоустроены ли вы?*		➤ **Yes** | *Да* ➤ **No** | *Нет*
	12.1 (A)	**Please specify in what profession, position do you work** *Пожалуйста, укажите вашу профессию и должность*		➤
	12.2 (A)	**Please specify the current location (country) of your workplace** *Укажите местоположение (страну) Вашего рабочего места*		➤ **Kazakhstan** | *Казахстан* ➤
	12.1 (B) (Б)	**In what profession, position do you plan to work?** *На какой позиции и в какой профессии планируете работать?*		➤
	13 (A)	**Are you willing to start working abroad?** **On a scale of 1 to 5 where:** **1 = yes** **2 = more yes than no** **3 = not sure** **4 = rather no than yes** **5 = no** *Готовы ли Вы начать работать заграницей?* *По шкале от 1 до 5, где:* *1 = да* *2 = скорее да, чем нет*		➤ 1 ➤ 2 ➤ 3 ➤ 4 ➤ 5

Note. By author.

Table B1 (continued)

Survey questions

		3 = не уверен 4 = скорее нет, чем да 5 = нет		
13.1 (A)		Are you considering moving permanently? On a scale of 1 to 5 where: 1 = yes 2 = more yes than no 3 = not sure 4 = rather no than yes 5 = no Вы рассматриваете переезд на постоянной основе? По шкале от 1 до 5, где: 1 = да 2 = скорее да, чем нет 3 = не уверен 4 = скорее нет, чем да 5 = нет		➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5
13.2 (A)		Are you considering moving on a temporary basis, with a subsequent return to Kazakhstan? On a scale of 1 to 5 where: 1 = yes 2 = more yes than no 3 = not sure 4 = rather no than yes 5 = no Вы рассматриваете переезд на временной основе, с последующим возвращением в Казахстан? По шкале от 1 до 5, где: 1 = да 2 = скорее да, чем нет		➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5

Note. By author.

Table B1 (continued)

Survey questions

		3 = не уверен 4 = скорее нет, чем да 5 = нет		
13.1 (B) (Б)		**Have you moved permanently?** **On a scale of 1 to 5 where:** **1 = yes** **2 = more yes than no** **3 = not sure** **4 = rather no than yes** **5 = no** *Вы переехали на постоянной основе?* *По шкале от 1 до 5, где:* *1 = да* *2 = скорее да, чем нет* *3 = не уверен* *4 = скорее нет, чем да* *5 = нет*		➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5
13.2 (B) (Б)		**Have you moved on a temporary basis,** **with a subsequent return to** **Kazakhstan?** **On a scale of 1 to 5 where:** **1 = yes** **2 = more yes than no** **3 = not sure** **4 = rather no than yes** **5 = no** *Вы переехали на временной основе, с* *последующим возвращением в Казахстан?* *По шкале от 1 до 5, где:* *1 = да* *2 = скорее да, чем нет* *3 = не уверен* *4 = скорее нет, чем да* *5 = нет*		➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5

Note. By author.

Table B1 (continued)

Survey questions

14		What country are you considering moving to? (If you have already moved, please indicate this country) *В какую страну вы рассматриваете переезд? (Если уже переехали, укажите данную страну)*		➢ _____
15		Does the presence of listed family and personal ties affect your choice of the migratory destination indicated in the Q14? On a scale of 1 to 5 where: 1 = yes 2 = more yes than no 3 = not sure 4 = rather no than yes 5 = no *Влияют ли для Вас перечисленные семейные и личные связи на выбор страны миграции, указанной в вопросе №14?* *По шкале от 1 до 5, где:* *1 = да* *2 = скорее да, чем нет* *3 = не уверен* *4 = скорее нет, чем да* *5 = нет*	➢ **Current family members living in the country of the destination** | *Нынешние члены семьи, проживающие в стране назначения* ➢ **Personal close ones living in the country of the destination (romantic partners, friends, etc.)** | *Близкие, проживающие в стране назначения (романтические партнеры, друзья, и т.д.)*	➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5
16		Does the presence of listed historical ties affect your choice of migratory destination indicated in the Q14? On a scale of 1 to 5 where: 1 = yes 2 = more yes than no 3 = not sure 4 = rather no than yes 5 = no	➢ **Historical origin of the family** | *Историческое происхождение семьи* ➢ **Similar cultures** | *Схожесть культур* ➢ **Common historical past** | *Общее историческое прошлое* ➢ **Common language** | *Общий язык*	➢ 1 ➢ 2 ➢ 3 ➢ 4 ➢ 5

Note. By author.

Table B1 (continued)

Survey questions

		Влияют ли для Вас перечисленные исторические связи на выбор страны миграции, указанной в вопросе №14? По шкале от 1 до 5, где: *1 = да* *2 = скорее да, чем нет* *3 = не уверен* *4 = скорее нет, чем да* *5 = нет*		

Note. By author.

Appendix C

Correlation analysis

Table C1

Correlation analysis

	PushF1	PushF2	PushF3	PushF4	PushF5	PushF6	PushF7	PullF1	PullF2	PullF3	PullF4	PullF5	PullF6	PullF7	PT1	PT2	HL1	HL2	HL3	HL4
PushF1	1																			
PushF2	0.472**	1																		
PushF3	0.585**	0.484**	1																	
PushF4	0.333**	0.308**	0.426**	1																
PushF5	0.389**	0.406**	0.492**	0.573**	1															
PushF6	0.336**	0.430**	0.529**	0.309**	0.568**	1														
PushF7	0.239*	0.369**	0.419**	0.454**	0.584**	0.672**	1													
PullF1	0.286**	0.243**	0.365**	0.319**	0.262**	0.191*	0.156	1												
PullF2	0.230*	0.195*	0.345**	0.202*	0.268**	0.321**	0.217*	0.536**	1											
PullF3	0.314**	0.340**	0.402**	0.211*	0.265**	0.260**	0.217*	0.763**	0.558**	1										
PullF4	0.207*	0.146	0.315**	0.285**	0.263**	0.230*	0.173	0.664**	0.640**	0.578**	1									
PullF5	0.234*	0.394**	0.360**	0.301**	0.334**	0.226*	0.191*	0.679**	0.550**	0.639**	0.666**	1								
PullF6	0.236*	0.279**	0.347**	0.189*	0.226*	0.194*	0.141	0.710**	0.561**	0.688**	0.696**	0.771**	1							
PullF7	0.314**	0.296**	0.346**	0.210*	0.242**	0.231*	0.182	0.665**	0.572**	0.754**	0.603**	0.719**	0.752**	1						
PT1	0.223*	0.103	0.259**	0.215*	0.090	0.104	0.061	0.343**	0.419**	0.256**	0.383**	0.324**	0.375**	0.253**	1					
PT2	0.181	0.117	0.105	0.181	0.019	0.087	0.017	0.263**	0.354**	0.219*	0.250**	0.271**	0.306**	0.283**	0.755**	1				
HL1	0.096	-0.035	0.189*	0.041	-0.007	0.098	0.070	0.215*	0.296**	0.172	0.258**	0.229**	0.214*	0.231*	0.456**	0.385**	1			
HL2	0.033	0.041	0.058	0.022	-0.041	0.069	0.011	0.134	0.130	0.069	0.134	0.147	0.134	0.140	0.369**	0.370**	0.668**	1		
HL3	0.068	0.082	0.166	-0.012	-0.029	0.117	0.044	0.112	0.281**	0.164	0.163	0.167	0.199*	0.189*	0.370**	0.328**	0.819**	0.744**	1	
HL4	0.002	0.016	0.098	0.020	-0.023	0.075	-0.018	0.242**	0.306**	0.147	0.281**	0.222*	0.264**	0.284**	0.438**	0.340**	0.629**	0.637**	0.672**	1

Note. By author.

PushF = Push factor; PullF = Pull factor; PT = Personal ties; HL = Historical linkages.

**Correlation is significant at the 0.01 level; *Correlation is significant at the 0.05 level.

Appendix D

Qualitative data summary

Table D1

Professional areas of employed respondents

Professional field	N	%
Economics and finance	30	36,6
Individual business owners	1	1,2
HR	2	2,4
Mass media	5	6,1
Tourism and hospitality	5	6,1
Engineering	7	8,5
Education	11	13,4
IT	7	8,5
Art and fashion	3	3,7
Law	3	3,7
Civil servant	2	2,4
Healthcare	3	3,7
Marketing	3	3,7
	82	

Note. By author.

Table D2

Workplace location of employed respondents

Workplace location	N	%
Kazakhstan	68	82,9
Italy	5	6,1
Germany	3	3,7
Czech Republic	1	1,2
Russia	1	1,2
Brazil	1	1,2
Netherlands	1	1,2
United States	1	1,2
Estonia	1	1,2
	82	

Note. By author.

Table D3

Planned professional areas of unemployed respondents

Professional field	N	%
Economics and finance	5	16,1
Individual business owners	6	19,4
HR	1	3,2
Mass media	1	3,2
Tourism and hospitality	2	6,5
Engineering	3	9,7
Education	2	6,5
IT	1	3,2
Art and fashion	1	3,2
Law	1	3,2
Civil servant	2	6,5
Healthcare	1	3,2
Marketing	2	6,5
Do not know / no answer	3	9,7
	31	

Note. By author.

Table D4

Actual (or planned) migratory destination

Area		N	%
America	North	33	29,2
Europe	Western	22	19,5
	Eastern	1	0,9
	Central	19	16,8
	North	2	1,8
	South	26	23
Asia	East	5	4,4
	South East	1	0,9
	South West	2	1,8
Australia	Australia	2	1,8
		113	

Note. By author.